William Fowlmore

John Athawes.

John Athawes.

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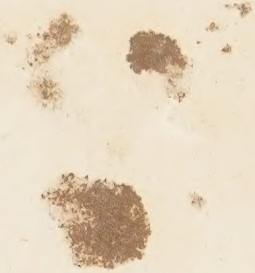

REFLECTIONS
UPON
Ancient and *Modern*
LEARNING.

BY
WILLIAM WOTTON, B. D.
Chaplain to the Right Honourable the
EARL of *NOTTINGHAM.*

The Second Edition, with Large Additions.

WITH A
DISSERTATION
UPON
The EPISTLES of
PHALARIS,
THEMISTOCLES,
SOCRATES,
EURIPIDES; &c.
AND
ÆSOP's FABLES.

By Dr. *BENTLEY.*

LONDON, Printed by *J. Leake*, for *Peter Buck*, at the Sign of the *Temple*, near the *Inner-Temple-Gate*, in *Fleet-Street*, MDCXCVII.

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TO THE

Right Honourable

DANIEL

Earl of NOTTINGHAM,

Baron FINCH of DAVENTRY.

May it pleaſe Your Lordſhip,

SInce I am, upon many Accounts, obliged to lay the Studies and Labours of my Life at Your Lordſhip's Feet, it will not, I hope, be thought Preſumption in me to make this following Addreſs, which, on my Part, is an Act of Duty.

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I could not omit so fair an Opportunity of declaring how sensible I am of the Honour of being under Your Lordship's Patronage. The Pleasure of telling the World that one is raised by Men who are truly Great and Good, works too powerfully to be smothered in the Breast of him that feels it; especially since a Man is rarely censured for shewing it, but is rather commended for gratifying such an Inclination, when he thankfully publishes to whom he is indebted for all the Comforts and Felicities of his Life.

But Your Lordship has another Right to these Papers, which is equal to that of their being

being mine: The Matter it ſelf directs me to Your Lordſhip as the Proper Patron of the Cauſe, as well as of its Advocate. Thoſe that enquire whether there is ſuch a Spirit now in the World as animated the greateſt Examples of Antiquity, muſt ſeek for living Inſtances, as well as abſtracted Arguments; and thoſe they muſt take care to produce to the beſt Advantage, if they expect to convince the World that they have found what they ſought for.

This therefore being the Subject of this following Enquiry, it ſeemed neceſſary to urge the ſtrongeſt Arguments

firſt, and to prepoſſeſs the World in favour of my Cauſe, by this Dedication. For thoſe that conſider that the Vertues which make up a Great Character, ſuch as Magnanimity, Capacity for the Higheſt Employments, Depth of Judgment, Sagacity, Elocution, and Fidelity, are united in as eminent a Degree in Your Lordſhip, as they are found aſunder in the true Characters of the Ancient Worthies; that all this is rendred yet more Illuſtrious by Your Exemplary Piety and Concern for the Church of England, *and Your Zeal for the Rights and Honour of the* Engliſh *Monarchy; and laſt*

laſt of all, that theſe Vertues do ſo conſtantly deſcend from Father to Son in Your Lordſhip's Family, that its Collateral Branches are eſteemed Public Bleſſings to their Age and Country; will readily confeſs that the World does ſtill Improve, and will go no further than Your Lordſhip, to ſilence all that ſhall be ſo hardy as to diſpute it.

Juſtice therefore, as well as Gratitude, oblige me to preſent theſe Papers to Your Lordſhip: Though, ſince I have taken the Freedom, in ſeveral Particulars, to diſſent from a Gentleman, whoſe Writings have been very kindly received

in the World, I am bound to declare, that the principal Reaſon which induced me to make this Addreſs, was, not to intereſt Your Lordſhip in my ſmall Diſputes, but to let the World ſee, that I have a Right to ſubſcribe my ſelf,

May it pleaſe Your Lordſhip,

Your Lordſhip's

Moſt Obliged,

And Moſt Dutiful

Servant and Chaplain,

WILLIAM WOTTON.

PREFACE.

THE Argument of these following Papers seems, in a great measure, to be so very remote from that Holy Profession, and from those Studies, to which I am, in a more particular manner, obliged to dedicate my self, that it may, perhaps, be expected I should give some Account of the Reasons which engaged me to set about it.

In the first place therefore, I imagined, that if the several Boundaries of *Ancient and Modern Learning* were once impartially stated, Men would better know what were still unfinished, and what were, in a manner, perfect; and consequently, what deserved the greatest Application, upon the score of its being imperfect: which might be a good Inducement to set those

thoſe Men, who, having a great Genius, find alſo in themſelves an Inclination to promote Learning, upon Subjects wherein they might, probably, meet with Succeſs anſwerable to their Endeavours: By which means, Knowledge, in all its Parts, might at laſt be compleated. I believed likewiſe, that this might inſenſibly lead Men to follow ſuch, and only ſuch, for their Guides, as they could confide in for the Ableſt and Beſt in thoſe ſeveral kinds of Learning to which they intended to apply their Thoughts. He that believes the Ancient *Greeks* and *Romans* to have been the greateſt Maſters of the *Art of Writing* that have ever yet appeared, will read them as his Inſtructors, will copy after them, will ſtrive to imitate their Beauties, and form his Stile after their Models, if he purpoſes to be excellent in that Art himſelf: All which things will be neglected, and he will content himſelf

himſelf to read them in their Tranſlations, to furniſh his Mind with Topics of Diſcourſe, and to have a general Notion of what theſe Ancient Authors ſay, if he thinks he may be equally Excellent a nearer Way. To read *Greek* and Latin with Eaſe, is a thing not ſoon learn'd; thoſe Languages are too much out of the common Road; and the Turn which the *Greeks* and *Latins* gave to all their Thoughts, cannot be reſembled by what we ordinarily meet with in Modern Languages; which makes them tedious, till maſtered by Uſe. So that conſtant Reading of the moſt perfect Modern Books, which does not go jointly on with the Ancients, in their Turns, will, by bringing the Ancients into Diſ-uſe, cauſe the Learning of the Men of the next Generation to ſink; by reaſon that they, not drawing from thoſe Springs from whence theſe excellent Moderns drew, whom they only propoſe

poſe to follow, nor taking thoſe Meaſures which theſe Men took, muſt, for want of that Foundation which theſe their Modern Guides firſt carefully laid, fail in no long Compaſs of Time.

Yet, on the other hand, if Men who are unacquainted with theſe things, ſhould find every thing to be commended becauſe it is *oldeſt*, not becauſe it is *beſt*; and afterwards ſhould perceive that in many material and very curious Parts of Learning, the Ancients were, comparatively ſpeaking, groſsly ignorant, it would make them ſuſpect that in all other things alſo they were equally deficient; grounding their general Concluſion upon this common, tho' erroneous Principle, that becauſe a Man is in an Error in thoſe things whereof we can judge, therefore he muſt be equally miſtaken in thoſe things where we cannot. Now, this Extream can be no way more eaſily avoided,

avoided, than by ſtating the due Limits of *Ancient* and *Modern Learning*; and ſhewing, in every Particular, to which we ought to give the Pre-eminence.

But I had another, and a more powerful Reaſon, to move me to conſider this Subject; and that was, that I did believe it might be very ſubſervient to Religion it ſelf. Among all the Hypotheſes of thoſe who would deſtroy our moſt Holy Faith, none is ſo plauſible as that of the *Eternity of the World*. The fabulous Hiſtories of the *Ægyptians*, *Chaldæans* and *Chineſes* ſeem to countenance that Aſſertion. The ſeeming Eaſineſs of ſolving all Difficulties that occurr, by pretending that ſweeping Floods, or general and ſucceſſive Invaſions of Barbarous Enemies, may have, by Turns, deſtroy'd all the Records of the World, till within theſe laſt Five or Six Thouſand Years, makes it very deſirable

to

to thoſe whoſe Intereſt it is, that the *Chriſtian Religion* ſhould be but an empty Form of Words, and yet cannot ſwallow the *Epicurean* Whimſies of Chance and Accident. Now the Notion of the Eternity of Mankind, through infinite ſucceſſive Generations of Men, cannot be at once more effectually and more popularly confuted, than by ſhewing how the World has gone on, from Age to Age, Improving; and conſequently, that it is at preſent much more Knowing than it ever was ſince the earlieſt Times to which Hiſtory can carry us.

But upon Examination of this Queſtion, ſeveral Difficulties appeared, which were carefully to be removed. The greateſt was, That ſome Sciences and Arts, of a very compounded Nature, ſeem really to have been more perfect anciently, than they are at preſent; which does, as it were, directly overthrow my Poſition.

Poſition. Therefore I was obliged, firſt, to enquire whether the Thing were true in Fact, or not: Next, If true, whether it proceeded from a particular Force of Genius, or from the Concurrence of ſome accidental Circumſtances; and alſo, whether, in caſe ſuch Circumſtances did concurr, in other Things, where thoſe Accidents could have no place, the Moderns did not out-doe the Ancients ſo much, as, allowing the World to be no older than the *Moſaical* Account, it were reaſonably to be expected they ſhould. For then, if all theſe Queſtions could be ſatisfactorily reſolved, the Objection would be no Objection at all; and Mankind might ſtill be ſuppoſed to improve, even though in ſome Particulars they ſhould go back, and fall ſhort of the Perfection which once they had.

There is no queſtion but theſe Excellencies of the Ancients might be

be accounted for, without hurting the *Mosaical* History, by resolving them into a particular Force of Genius, evidently discernible in former Ages, but extinct long since. But this seems to be of very ill Consequence, since it does, as it were, suppose that Nature were now worn out, and spent; and so may tempt a *Libertine* to think that Men, as Mushrooms are said to do, sprung out of the Earth when it was fresh and vigorous, impregnated with proper Seminal Atoms, now, of many Ages, no longer seen.

When nothing therefore appeared to be so likely to take off the Force of the main Objection, as the finding of particular Circumstances which might suit with those Ages that did exceed ours, and with those things wherein they did exceed us, and with no other Age nor Thing besides; I did at last please my self, that I had found these Circumstances; and in setting

ſetting them down, I took care, neither to be deceived my ſelf, nor (as I hope) to deceive any Body elſe.

But what ſhall be ſaid to thoſe numerous Deluges, which, no Body knows how many Ages before that of *Noah*, are ſaid to have carried away all Mankind, except here and there a Couple of ignorant Salvages, who got to ſome high Mountain, and from thence afterwards repleniſh'd the Earth? This Hypotheſis (as theſe Men call it) is ſo very precarious, that there needs nothing to be replied to it, but only that it is as eaſily diſ-proved by Denying, as defended by Aſſerting, ſince no Records nor Traditions of the Memory of the Facts are pretended; and ſomething eaſier, becauſe it may be demonſtrably proved, that a general Flood cannot be effected without a Miracle, and if it could, that it muſt deſtroy the whole Race of Mankind, unleſs ſome few ſhould be preſerved,

as the Holy Scriptures assure us *Noah* was, who then would preserve the Memory of their own Deliverance, which destroys our *Libertines* Hypothesis. Now, partial Deluges are not sufficient: If one Country be destroyed, another is preserved; and if the People of that Country have Learning among them, they will also have a Tradition, that it once was in the other Countries too, which are now dis-peopled.

Upwards, as far as the Age of *Hippocrates*, Knowledge may be traced to its several Sources: But of any Histories older than the *Mosaical*, there are no sort of Foot-steps remaining, which do not, by their Contradictions, betray their Falshood; setting those aside which *Moses* himself has preserved. If any should pretend to solve the Difficulty, by supposing Invasions of Barbarous Enemies, which may have destroy'd the Memory of all past Knowledge, they

they will ſoon ſee new Difficulties ariſe, inſtead of having the old ones removed. There is Reaſon to ſuppoſe that Invaſions of Barbarous Enemies were anciently of the ſame Nature, as they have been ſince; that is, they might poſſibly make entire Conqueſts of the Countries which were ſo invaded; but we cannot ſuppoſe that any of theſe pretended *Ante-Moſaical* Conqueſts, of which we are now ſpeaking, made a greater Alteration than that which the *Goths* and *Vandals* made in the *Roman* Empire; that which the *Saracens* firſt, and the *Turks* afterwards made in the *Greek*; or that of the *Tartars* in *China*. The *Goths* and *Vandals* had ſcarce any Learning of their own; and if we conſider Politeneſs of Manners, and nothing elſe, they ſeem truly to have deſerved the Name of *Barbarous*: They therefore took ſome of the *Roman* Learning, as much as they thought was for their Turn, the

Memory whereof can never be said to have been quite extinct during the whole Course of those ignorant Ages which succeeded, and were the Effects of their Conquests. The *Saxons* in *England*, being taught by the *British* Refugees, who planted themselves in *Ireland*, and from thence, by the Way of *Scotland*, came by degrees back again into their own Country, had as much, if not more Learning than any of their *Europæan* Neighbours. The *Saracens* applied themselves to Learning in earnest, as soon as the Rage of their first Wars was over; and resolving to make theirs a compleat Conquest, robb'd the *Greeks* of their Knowledge, as soon as they had possessed themselves of the most valuable Parts of their Empire. The *Turks* have learnt enough, not to be thought illiterate, though less proportionably than any of the forementioned Conquerors: They can Write and Read; they preserve some rude

rude Annals of their own Exploits, and general Memorials, it matters not how imperfect of precedent Times: And they have loſt none of the Mechanical Arts that they had occaſion for, which they found in the Countries where they came, ſince they either work themſelves, or employ others that ſhall; which, to the preſent Purpoſe, is all one. The *Tartars* have, ſince their Conqueſt, incorporated themſelves with the *Chineſes*, and are now become one People, only preſerving the Authority ſtill in their own Hands.

In all theſe Inſtances one may obſerve, that how barbarous ſoever theſe ſeveral Conquerors were when firſt they came into Civilized Countries, they, in time, learnt ſo much at leaſt of the Arts and Sciences of the People whom they ſubdued, as ſerved them for the neceſſary Uſes of Life; and thought it not beneath them to be inſtructed by thoſe to

whom they gave Laws. Wherefore there is Reaſon to believe, that ſince Mankind has always been of the ſame Make, former Conqueſts would have produced the ſame Effects, as we ſee later ones have done. In ſhort, We cannot ſay that ever any one Invention of conſiderable Uſe has been laid aſide, unleſs ſome other of greater and more general Uſe has come in the room of it, or the Conquerors took it away, for ſome Political Reaſon, either letting it totally die, or ſupplying it with ſomething elſe, which to them ſeemed a valuable Equivalent. Have any of theſe Conquerors, ſince *Tubal-Cain*'s Time, once ſuffered the Uſe of Metals, Iron for inſtance, or Gold, to be loſt in the World? Hath the Uſe of Letters been ever intermitted ſince the Time of that *Cadmus*, whoever he was, that firſt found them out? Or, was Mankind ever put to the trouble of Inventing them a ſecond time?

time? Have the Arts of Planting, of Weaving, or of Building, been at any time, since their first Invention, laid aside? Does any Man believe that the Use of the *Load-stone* will ever be forgotten? Are the *Turks* so barbarous, or so spightful to themselves, that they will not use Gunpowder, because it was taught them by *Christians*? Does not *Garçilasso de la Vega* inform us, that the *Peruvians* would have worshipped the *Spaniards* as Gods, if their Cruelties had not soon led these harmless People to take them to be something else, because they taught them the Use of *Iron* and *Looking-Glasses*? (Whence we may be sure that this innocent and honest Nation never had Learning amongst them before.) Do not we find, that they and the *Mexicans*, in the compass of Four or Five Hundred Years, which is the utmost Period of the Duration of either of their Empires, went on still

Improving? (As the whole *New World* would, probably, have done in not many Ages, if these two mighty Nations had extended their Conquests, or if new Empires had arisen, even though the *Spaniards* had never come among them; since those two Empires of *Mexico* and *Peru*, which were the only considerable Civilized Governments in *America*, got constant Ground of their Enemies; having the same Advantages over them, as formed Troops have over a loose Militia.) Or, can we think that they would again have relapsed to their old Barbarity of themselves, when once they had been weary of those Arts, and of that Learning (such as it was) which then they had? Men are not such stupid Creatures, but if an Invention is at any time found out, which may do them great and eminent Service, they will learn it, and make use of it, without enquiring who it is they learn

learn it of; or taking a Prejudice at the Thing, becauſe, perhaps, they may be indebted to an Enemy for it. *Barbarous* and *Polite* are Words which rather referr to Matters of *Breeding* and *Elegance*, than of *Sound Judgment*, or *Good Senſe*; which firſt ſhew themſelves in making Proviſion for Things of Convenience, and evident Intereſt, wherein Men ſcarce ever commit palpable Miſtakes. So that it is unaccountable that the Hiſtory of Learning and Arts ſhould be of ſo confeſſedly late a Date, if the Things themſelves had been many Ages older; much more if the World had been Eternal.

Beſides theſe, I had a Third Reaſon to engage me to this Undertaking; which was, the Pleaſure and Uſefulneſs of thoſe Studies to which it neceſſarily led me: For Diſcoveries are moſt talked of in the Mechanical Philoſophy, which has been but lately revived in the World.

Its

Its Profeſſors have drawn into it the whole Knowledge of Nature, which, in an Age wherein Natural Religion is denied by many, and Revealed Religion by very many more, ought to be ſo far known at leaſt, as that the Inviſible Things of the Godhead may be clearly proved by the Things that are ſeen in the World. Wherefore I thought it might be Labour exceedingly well ſpent, if, whilſt I enquired into what was anciently known, and what is a new Diſcovery, I ſhould at the ſame time furniſh my Mind with new Occaſions of admiring the boundleſs Wiſdom and Bounty of that Almighty and Beneficent Eſſence, in and by whom alone this whole Univerſe, with all its Parts, live, and move, and have their Being.

I had alſo a freſh Inducement to this Search, when I found to how excellent purpoſe my moſt Learned and Worthy Friend, Dr. *Bentley*, had, in his late incomparable Diſcourſes

courſes *againſt Atheiſm*, ſhewn what admirable Uſe may be made of an accurate Search into Nature, thereby to lead us directly up to its Author, ſo as to leave the unbelieving World without Excuſe.

But, after all that I have alledged for my ſelf, I muſt acknowledge, that I ſoon found that I did not enough conſider *Quid valeant humeri, aut quid ferre recuſent.* The Subject was too vaſt for any one Man, much more for me, to think to do it Juſtice; and therefore, as ſoon as I had drawn up a rude Scheme of the Work, I intended to have given it over, if the importunate Sollicitations of my very Ingenious Friend, *Anthony Hammond*, Eſq; had not at laſt prevailed upon me to try what I could ſay upon it: And it was ſo difficult a Thing to me to refuſe what was ſo earneſtly preſſed by a Perſon who was ſo very dear to me, and which in the preſent Caſe was a great deal more,

more, One, for whoſe Sence and Judgment, all that know him have ſo very particular a Regard, that I reſolved at laſt, rather to hazard my own Reputation, than to deny his Requeſt; eſpecially, ſince I hoped that it might, perhaps, give ſome Body elſe an Opportunity to compleat that, of which this Treatiſe is a very imperfect Eſſay.

I hope I need make no Apology, that a great Part of this Diſcourſe may ſeem too Polemical for a Writing of this kind: For that could not be well avoided, becauſe the Argument it ſelf has been ſo much debated. The ableſt Men of the two oppoſite Parties, are, Sir *William Temple*, and Monſieur *Perrault*: They are two great Men, and their Writings are too well known, and too much valued, to be over-looked. They cloath their Thoughts in ſo engaging a Dreſs, that a Man is tempted to receive all they ſay, without

without Examination; and therefore I was afraid that I might have been accuſed of betraying my Cauſe, if, whilſt I endeavoured throughout the whole Controverſie to act the Part of a Mediator, and to give to every Side its juſt due, I had omitted what theſe two elegant Advocates had ſeverally alledged for their reſpective Hypotheſes.

What Cenſure the World will paſs upon my Performance, I know not; only I am willing to think, that thoſe who ſhall not agree to what I ſay, will grant that I have repreſented the Opinions of other Men with Impartiality and Candour, and that I have not diſcovered any Bigottry or Inclination to any one particular Side; which will be a good Step to make them believe, that I ſhall not obſtinately defend any one Poſition, which may hereafter be proved to be erroneous.

June 11. 1694.

POST-

POSTSCRIPT.

SInce the *Second Edition* of my Book was Printed off, we have had an Account in the *Journal des Sçavans*, that Monſieur *Perrault* has publiſh'd a THIRD PART of his *Parallel between the Ancients and the Moderns*; in which he undertakes to prove, that the Skill of the Moderns in *Geography*, *Philoſophy*, *Medicine*, *Mathematics*, *Navigation*, &c. is preferrible to that of the Ancients. The Book is not yet, that I know of, in *England*, and poſſibly may not be procurable in ſome time. I thought it neceſſary, however, to take notice, that I have had a bare Intimation of ſuch a Book, and no more; that ſo if in any Material Things we ſhould happen to Agree, (as writing upon the ſame Argument, tis very probable

bable we may,) I might not hereafter be thought a Plagiary. There was no danger hitherto; since as far as he had gone before, I either openly dissented from him, or directly abridged his Words.

Pag. 220. I have, upon his own Authority, given *Columbus* the Credit of Discovering that little Bone in the Inner Cavity of the Ear, which, from its figure, is commonly call'd the *Stirrup*: And indeed, he being the first that ever mention'd it in Print, and pretending that it was his own Invention, seems to have the fairest Plea to the Honour of it. But *Philippus Ingrassias*, who wrote some time before *Columbus*, certainly knew it: For, in his Commentary upon *Galen de Ossibus*, he expresly mentions it; and for that Reason, *Falloppius*, who could not want Opportunity of being truly inform'd, and was a right honest Man, and a judicious Anatomist,

Anatomiſt, and one to whom many Diſcoveries are owing, aſcribes it to him in ſuch Terms as put the Controverſie beyond diſpute. *Tertium* (ſays *Falloppius*, ſpeaking of the little Bones in the Inner Cavity of the Ear) *ſi nolumus debitâ laude quenquam defraudare, invenit & promulgavit primus Johannes Philippus ab Ingraſſia Siculus Philoſophus ac Medicus Doctiſſimus dum Neapolitano in Gymnaſio publicè Anatomen doceret:* And a little after; *Deus tamen glorioſus ſcit Ingraſſiæ fuiſſe inventum; atque cum Stapedis aut Staffæ noſtrorum Patrum effigiem geſtet, merito Stapedis nomine ab eodem fuiſſe donatum.* Had *Ingraſſias*'s Book been printed in his Lifetime, there had never been room for a Diſpute; though his Right was ſo well known, that *Bartholomæus Euſtachius*, who wrote ſoon after *Columbus*, and put in his Claim to the Glory of the Diſcovery,

covery, mentions *Ingraſſias*'s Pretences, which *Columbus* does not.

Some, perhaps, will think this Enquiry into the Author of this Diſcovery, to be a needleſs Affectation of Exactneſs. But 'tis ſo much the Duty of all Writers, not to miſ-lead their Readers in the ſmalleſt Particular, that they are obliged to rectifie their own Miſtakes where-ever they find them, and not to be afraid of being accuſed of Negligence; ſince Truth, and not Glory, ought to be the ultimate End of all our Labours and Enquiries.

I am obliged alſo to take notice, that I have lately got a ſight of *Servetus*'s *Chriſtianiſmi Reſtitutio*, out of which that famous Paſſage *concerning the Circulation of the Blood*, which I ſet down at length, *p.* 230. was copied long ago by that worthy Member of the *Royal Society*, Mr. *Abraham Hill*, from whom Mr. *Bernard*

had it. My Lord Biſhop of *Norwich*, whoſe incomparable Library contains every thing that is rare and excellent, did me the honour to ſhow it me. His Manuſcript Copy is a Tranſcript of that Printed one which is preſerved in the *Landtgrave* of *Heſſe*'s Library at *Caſſels*; the very Book that was peruſed by *Sandius*, who gives an Account of it in his *Bibliotheca Antitrinitariorum*. The Book it ſelf was Printed (at *Baſil*, ſays *Sandius*) in MDLIII. and is a Collection of all *Servetus*'s *Theological Tracts*, though conſiderably enlarged: Some of which, and particularly his *Diſcourſes concerning the Trinity*, had been publiſhed XX Years before. This I mention, becauſe, if what *Servetus* ſays of the Paſſage of the Blood through the Lungs be in the former Edition, the Diſcovery has ſo much the greater Antiquity. The Paſſages now in queſtion, are

in

in the *Fifth Book of the Trinity*, where he treats *of the Holy Ghoſt*: There he takes pains to prove, (*a*) that the *Subſtance of the Created Spirit of Jeſus Chriſt is Eſſentially joined to the Subſtance of the Holy Ghoſt.* To explain this, he talks much of God's Breathing the Soul into Man, which, by his manner of Explication, it is plain, he believed to be Material. The Way he proceeds is this: 'He ſuppoſes Three Spirits in Man's Body, '*Natural*, *Vital*, and *Animal*; which '(ſays he) are (*b*) really not Three, 'but Two diſtinct Spirits. The '*Vital* is that which is communi-'cated by *Anaſtomoſes* from the 'Arteries to the Veins, in which 'it is called *Natural.* The *Blood* 'therefore is *Firſt*, whoſe Seat is

(*a*) He ſays he introduces this Diſputation, *ut inde intelligas ipſi Spiritûs Sancti Subſtantiæ eſſe eſſentialiter adjunctam creati Spiritûs Chriſti Subſtantiam.*

(*b*) *Qui vere non ſunt tres, ſed duo Spiritus diſtincti. Vitalis eſt ſpiritus qui per Anaſtomoſes ab Arteriis communicatur Venis, in quibus dicitur Naturalis. Primus ergo eſt Sanguis, cujus ſedes eſt in hepate & Corporis Venis: Secundus eſt Spiritus vitalis, cujus ſedes eſt in corde, & corporis arteriis: Tertius eſt ſpiritus animalis, quaſi lucis radius, cujus ſedes eſt in cerebro & corporis nervis.*

'in the Liver and Veins: The 'Vital Spirit is *Second*, whose Seat 'is in the Heart and Arteries: 'The *Animal Spirit* is *Third*, 'which is like a Ray of Light, 'and has its Seat in the Brain and 'Nerves.' So that he makes the beginning of the whole Operation to be in the Liver; which, according to him, is the original Work-house of the Blood, which he calls the *Soul* or *Life*, as it is called in the Old Testament.

Now to understand how the Blood is the Life, he says, (*c*) 'We must first 'understand the substantial Generation of the Vital Spirit, which is compounded of, and nourished by Inspired Air, 'and the subtilest part of 'the Blood: The *Vital Spirit* has its original 'in the left Ventricle of 'the

(*c*) *Ad quam rem est prius intelligenda substantialis Generatio ipsius Vitalis Spiritûs, qui ex Aëre inspirato & subtilissimo sanguine componitur & nutritur: Vitalis spiritus in sinistro cordis Ventriculo suam originem habet, juvantibus maxime pulmonibus ad ipsius generationem. Est spiritus tenuis, caloris vi elaboratus, flavo colore, igneâ potentiâ, ut sit quasi ex puriore sanguine lucens vapor, substantiam continens aquæ, aëris &*

'the Heart, by the assistance of the Lungs, 'which chiefly contribute to its generation. 'It is a *subtile* Spirit (so 'I render *tenuis* here) 'wrought by the force 'of Heat; of a florid 'Colour, having the 'power of Fire: so 'that it is a sort of 'shining Vapour made 'of the purer part of 'the Blood, containing 'within it self the substance of Water, Air 'and Fire. It is made 'in the Lungs, by the 'mixture of Inspired Air 'with that Elaborated 'Subtile Blood which 'the Right Ventricle of 'the Heart communi-

ignis: generatur ex factâ in pulmone mixtione inspirati aëris cum elaborato subtili sanguine, quem dexter ventriculus sinistro communicat. Fit autem communicatio hæc non per parietem cordis medium, ut vulgo creditur, sed magno artificio à dextro cordis ventriculo longo per pulmones ductu, agitatur sanguis subtilis: à pulmonibus præparatur, flavus efficitur, & à venâ arteriosâ in arteriam venosam transfunditur; deinde in ipsâ arteriâ venosâ inspirato aëri miscetur, & exspiratione à fuligine repurgatur: atque ita tandem à sinistro cordis ventriculo totum mixtum per Diastolen attrahitur, apta supellex ut fiat spiritus vitalis.

Quod ita per pulmones fiat communicatio & præparatio, docet conjunctio varia & communicatio venæ arteriosæ cum arteriâ venosâ in pulmonibus. Confirmat hoc magnitudo insignis venæ arteriosæ, quæ nec talis nec tanta facta esset, nec tantam à corde ipso vim purissimi sanguinis in pulmones emitteret ob solum eorum nutrimentum, nec cor pulmonibus hac ratione serviret, cum præsertim antea in embryone solerent pulmones ipsi aliunde nutriri ob membranulas seu ——— Cordis usque ad horam nativitatis nondum apertas, ut docet Galenus.

'cates to the Left. Now this Com-
'munication is not made through
'the *Septum* of the Heart, as is
'commonly believed, but the ſubtil
'Blood is very artificially agitated
'by a long paſſage through the
'Lungs from the right Ventricle of
'the Heart, and is prepared, made
'florid by the Lungs, and trans-
'fuſed out of the *Arterious Vein*
'into the *Venous Artery*, and at laſt
'in the *Venous Artery* it ſelf it is
'mixed with the inſpired Air, and
'by exſpiration purged from its
'Dregs. And thus at length the
'whole Mixture is attracted, by the
'*Diaſtole* of the Heart, into the left
'Ventricle, being now a fit Sub-
'ſtance out of which to form the
'Vital Spirit.

'Now that this Communication
'and Preparation is made by the
'Lungs, is evident from the various
'Conjunction and Communication
'of the *Arterious Vein* with the

'*Venous*

'*Venous Artery* in the Lungs; the 'remarkable largeneſs of the *Arte-* 'rious Vein does likewiſe confirm 'it: ſince it would never have 'been made of that Form and Bulk, 'nor would it have emitted ſo 'great a quantity of very pure 'Blood out of the Heart into the 'Lungs, if it had been only for 'their Nouriſhment: nor would 'the Heart have been this way ſer- 'viceable to the Lungs, ſince the '*Fœtus* in the Womb are other- 'wiſe nouriſhed, by reaſon of the 'cloſeneſs of the Membranes of the 'Heart, which are never opened 'till the Birth of the Child, as *Galen* 'teaches.' So that the whole Mixture of Fire and Blood is made in the Lungs where there is a (*d*) 'Transfuſion out of the *Ar-* 'terious Vein into the *Venous Artery*, 'which *Galen* took no notice of.

(*d*) *Transfuſio à venâ arteriosâ ad arteriam venoſam propter ſpiritum, à Galeno non animadverſa.*'

Afterwards he says, (*e*) 'That 'this *Vital Spirit* is transmitted from the left 'Ventricle of the Heart 'into the Arteries of the 'whole Body, so that 'the more subtile Parts 'get upwards where they 'are yet more refined, 'especially in the *Plexus Retiformis*, 'which lies in the Base of the Brain, 'where, from *Vital*, it begins to 'become *Animal*, and approaches to 'the proper Nature of the Rational 'Soul.'

(*e*) *Ille itaque spiritus vitalis à sinistro cordis ventriculo in arterias totius corporis deinde transfunditur, ita ut qui tenuior est, superiora petat, ubi magis adhuc elaboratur, præcipue in plexu retiformi sub basi cerebri sito, ubi ex vitali fieri incipit animalis ad propriam rationalis animæ rationem accedens.*

This he reasons long upon, to prove, that the Blood is the Soul of Man, and seems to allow no other but what is thus made; first elaborated in the Liver, thence carried by the Veins into the right Ventricle of the Heart, and so into the Lungs; where being mix'd with Air, it becomes Vital; and afterwards being carried by the Arteries into

into the Brain, it is there further ſublimed, till it receives its laſt Perfection, ſo as to be fit to perform the nobleſt Operations of the Animal Life.

If we compare now this Notion thus explained by *Servetus*, with Dr. *Harvey's Theory of the Circulation of the Blood*, we ſhall plainly ſee that he had imperfect Glimmerings of that Light which afterwards Dr. *Harvey* communicated with ſo bright a Luſtre to the learned World: Which Glimmerings, ſince they were ſo true, having nothing in them of a Falſe Fire, I much wonder that he went no further; though at the ſame time I cannot but heartily congratulate the Felicity of my own Country, which produced the Man that firſt ſaw the Importance of theſe noble Hints which he improved into a Theory, and thereby made them truly uſeful to Mankind.

Before

Parts of Natural and Mathematical Learning, it would have met with as proportionable an Encreaſe; unleſs we ſhould ſay, that it is already come to its higheſt Perfection; which, whether it be or no, I cannot pretend to decide.

The entire Diſcourſes which are added, are printed by themſelves, for the Satisfaction of thoſe who have bought the Firſt Edition, and have no Curioſity to compare that with the Second. But I have not re-printed thoſe leſſer Additions which are interwoven into the Body of the Book, both becauſe they would appear only like a parcel of looſe Scraps, and becauſe ſomething was to be done in compliance to the Book-ſeller, who, (having once more, at a time when Printing labours under ſo great Diſcouragements, adventured

to

to publish so large a Book which so few People will care to read) desired that this Second Edition might be made as Valuable to him as well it cou'd.

April 30.
1697.

CON-

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REFLE-

REFLECTIONS
UPON
Ancient and *Modern*
LEARNING.

CHAP. I.
General Reflections upon the State of the Queſtion.

THE preſent State of the Deſigns and Studies of Mankind is ſo very different from what it was $\overline{CL}$ Years ago, that it is no Wonder if Men's Notions concerning them vary as much as the Things themſelves. This great Difference has ariſen from the Deſire which every Man has, who believes that he can do greater Things than his Neighbours, of letting them ſee how much he does excel them: For that will neceſſarily oblige him to omit no Opportunity that offers it ſelf to do it, and

afterwards to expreſs his Satisfaction that he has done it. This is not only viſible in particular Perſons, but in the ſeveral Ages of Mankind, (which are only Communities of particular Perſons, living at the ſame time,) as often as their Humours, or their Intereſts, lead them to purſue the ſame Methods. This Emulation equally ſhews it ſelf, whatſoever the Subject be, about which it is employed; whether it be about Matters of Trade, or War, or Learning, it is all one: One Nation will ſtrive to out-do another, and ſo will one Age too, when ſeveral Nations agree in the purſuit of the ſame Deſign; only the Jealouſie is not ſo great in the Conteſt for Learning, as it is in that for Riches and Power; becauſe theſe are Things which enable their Poſſeſſors to do their Neighbours greater miſchief proportionably as they poſſeſs them, ſo that it is impoſſible for bordering Nations to ſuffer with any patience that their Neighbours ſhould grow as great as they in either of them, to their own prejudice; though they will all agree in raiſing the Credit of the Age they live in upon the Account of theſe Advantages, that being the only Thing wherein their Intereſts do perfectly unite.

If this Way of Reaſoning will hold, it may be asked how it comes to paſs, that the

the Learned Men of the laſt Age did not ſo generally pretend that they out-did the Ancients, as our preſent Learned Men do now? They would, without queſtion, could they have had any Colour for it: It was the Work of one Age to remove the Rubbiſh, and to clear the Way for future Inventors. Men ſeldom ſtrive for Maſtery, where the Superiority is not in ſome ſort diſputable; then it is that they begin to ſtrive: Accordingly, as ſoon as there was a fair Pretence for ſuch a Diſpute, there were not wanting thoſe who made the moſt of it, both by exalting their own Performances, and diſparaging every Thing that had been done of that kind by their Predeceſſors. 'Till the New Philoſophy had gotten ground in the World, this was done very ſparingly; which is but within the compaſs of $\overline{XL}$ or $\overline{L}$ Years. There were but few before, who would be thought to have exceeded the Ancients, unleſs it were ſome Phyſicians, who ſet up *Chymical* Methods of Practice, and Theories of Diſeaſes, founded upon *Chymical* Notions, in oppoſition to the *Galenical:* But theſe Men, for want of converſing much out of their own Laboratories, were unable to maintain their Cauſe to the general Conviction of Mankind: The Credit of the Cures which

they wrought, not ſupporting them enough againſt the Reaſonings of their Adverſaries.

Soon after the Reſtauration of King *Charles* II. upon the Inſtitution of the *Royal Society*, the Comparative Excellency of the Old and New Philoſophy was eagerly debated in *England*. But the Diſputes then managed between *Stubbe* and *Glanvile*, were rather Particular, relating to the Royal Society, than General, relating to Knowledge in its utmoſt extent. In *France* this Controverſie has been taken up more at large: The *French* were not ſatisfied to argue the Point in Philoſophy and Mathematicks, but even in Poetry and Oratory too; where the Ancients had the general Opinion of the Learned on their Side. Monſieur *de Fontenelle*, the celebrated Author of a Book *concerning the Plurality of Worlds*, begun the Diſpute about ſix Years ago, in a little Diſcourſe annexed to his *Paſtorals*. He is ſomething ſhy in declaring his Mind; at leaſt, in arraigning the Ancients, whoſe Reputations were already eſtabliſhed; though it is plain, he would be underſtood to give the Moderns the Preference in Poetry and Oratory, as well as in Philoſophy and Mathematicks. His Book being received in *France* with great Applauſe, it was oppoſed

poſed in *England* by Sir *William Temple*, who, in the *Second Part* of his *Miſcellanea*, has printed an *Eſſay* upon the ſame Subject. Had Monſieur *de Fontenelle*'s Diſcourſe paſſed unqueſtion'd, it would have been very ſtrange; ſince there never was a New Notion ſtarted in the World, but ſome were found who did as eagerly contradict it.

The Hypotheſis which Sir *William Temple* appears for, is received by ſo great a Number of Learned Men, that thoſe who oppoſe it, ought to bring much more than a poſitive Affirmation; otherwiſe, they cannot expect that the World ſhould give Judgment in their Favour. The Queſtion now to be asked, has formerly been enquired into by few, beſides thoſe who have chiefly valued Oratory, Poeſie, and all that which the *French* call the *Belles Lettres*; that is to ſay, all thoſe Arts of Eloquence, wherein the Ancients are of all hands agreed to have been truly excellent. So that Monſieur *de Fontenelle* took the wrong Courſe to have his Paradox be believed; for he aſſerts all, and proves little; he makes no Induction of Particulars, and rarely enters into the Merits of the Cauſe: He declares, that he thinks Love of Eaſe to be the reigning Principle amongſt Mankind; for which Reaſon,

perhaps, he was loth to put himſelf to the trouble of being too minute. It was no wonder therefore if thoſe to whom his Propoſition appeared entirely New, condemned him of *Sufficiency*, *the worſt Compoſition out of the Pride and Ignorance of Mankind.*

However, ſince his Reaſonings are, in the main, very juſt, eſpecially where he diſcourſes of the Comparative Force of the Genius's of Men in the ſeveral Ages of the World, and of the Equal Force of Mens Underſtandings abſolutely conſidered in all Times ſince Learning firſt began to be cultivated amongſt Mankind, I reſolved to make ſome Enquiry into the Particulars of thoſe Things which are aſſerted by ſome to be Modern Diſcoveries, and vindicated to the Ancients by others.

The General Propoſition which Sir *William Temple* endeavours to prove in his *Eſſay*, is this, " That if we reflect " upon the Advantages which the An- " cient *Greeks* and *Romans* had, to im- " prove themſelves in Arts and Sciences, " above what the Moderns can pretend " to; and upon that Natural Force of Ge- " nius, ſo diſcernible in the earlieſt Wri- " ters, whoſe Books are ſtill extant, which " has not been equalled in any Perſons

" that

" that have ſet up for Promoters of Know-
" ledge in theſe latter Ages; and com-
" pare the Actual Performances of them
" both together, we ought in Juſtice to
" conclude, that the Learning of the pre-
" ſent Age, is only a faint, imperfect
" Copy from the Knowledge of former
" Times, ſuch as could be taken from thoſe
" ſcatter'd Fragments which were ſaved
" out of the general Shipwreck.

The Queſtion that ariſes from this Propoſition will be fully underſtood, if we enquire, (1.) Into thoſe Things which the Ancients may have been ſuppoſed to bring to Perfection, (in caſe they did ſo,) not becauſe they excelled thoſe that came after them in Underſtanding, but becauſe they got the Start by being born firſt. (2.) Whether there are any Arts or Sciences which were more perfectly practiſed by the Ancients, though all imaginable Care hath been ſince uſed to equal them. (3.) Whether there may not be others wherein they are exceeded by the Moderns, though we may reaſonably ſuppoſe that both Sides did as well as they could.

When ſuch Enquiries have once been made, it will be no hard matter to draw ſuch Inferences afterwards, as will enable us to do Juſtice to both Sides.

It must be owned, that these Enquiries do not immediately resolve the Question which Sir *William Temple* put, for he confounds two very different Things together; namely, *Who were the Greatest Men, the Ancients, or the Moderns?* and, *Who have carried their Enquiries fartheſt?* The first is a very proper Question for a Declamation, though not so proper for a Discourse, wherein Men are supposed to reason severely; because, for want of Mediums whereon to found an Argument, it cannot easily be decided: For, though there be no surer Way of judging of the Comparative Force of the Genius's of several Men, than by examining the respective Beauty or Subtilty of their Performances; yet the good Fortune of appearing first, added to the Misfortune of wanting a Guide, gives the first Comers so great an Advantage, that though, for instance, the *Fairy Queen*, or *Paradise Lost*, may be thought by some to be better Poems than the *Ilias*; yet the same Persons will not say but that *Homer* was at least as great a Genius as either *Spencer* or *Milton*. And besides, when Men judge of the Greatness of an Inventors Genius barely by the Subtilty and Curiosity of his Inventions, they may be very liable to Mistakes in their Judgments, unless they know and are able to judge of the Easiness

or

or Difficulty of thoſe Methods, or Ratiocinations, by which he arrived at, and perfected theſe his Inventions; which, with due Allowances, is equally applicable to any Performances in Matters of Learning of any ſort.

It will however be ſome Satisfaction to thoſe who are concerned for the Glory of the Age in which they live, if, in the firſt place it ſhould be proved, That as there are ſome parts of real and uſeful Knowledge, wherein not only great Strictneſs of Reaſoning, but Force and Extent of Thought is required thoroughly to comprehend what is already invented, much more to make any conſiderable Improvements, ſo that there can be no Diſpute of the Strength of ſuch Men's Underſtandings, who are able to make ſuch Improvements; ſo in thoſe very Things, ſuch, and ſo great Diſcoveries have been made, as will oblige impartial Judges to acknowledge, that there is no probability that the World decays in Vigour and Strength, if (according to Sir *William Temple's* Hypotheſis) we take our Eſtimate from the Meaſure of thoſe Men's Parts, who have made theſe Advancements in theſe later Years; eſpecially, if it ſhould be found that the Ancients took a great deal of Pains upon theſe very Subjects, and had able Maſters

to

to inſtruct them at their firſt ſetting out: And, Secondly, If it ſhould be proved, that there are other curious and uſeful Parts of Knowledge, wherein the Ancients had as great Opportunities of advancing and purſuing their Enquiries, as the Moderns, which were either ſlightly paſſed over, or wholly neglected, if we ſet the Labours of ſome few Men aſide: And, Laſtly, If it ſhould be proved, that by ſome great and happy Inventions, wholly unknown to former Ages, new and ſpacious Fields of Knowledge have been diſcovered, and, purſuant to thoſe Diſcoveries, have been viewed, and ſearched into, with all the Care and Exactneſs which ſuch noble Theories required. If theſe Three Things ſhould be done, both Queſtions would be at once reſolved, and Sir *William Temple* would ſee that the Moderns have done ſomething more than Copy from their Teachers, and that there is no abſolute neceſſity of making all thoſe melancholy Reflections upon (*a*) *the Sufficiency and Ignorance of the preſent Age*, which he, moved with a juſt Reſentment and Indignation, has thought fit to beſtow upon it.

(*a*) Pag. 5. 55, 56.

How far theſe Things *can* or *cannot* be proved, ſhall be my Buſineſs in theſe following Papers to enquire. And in theſe Enquiries

ries I ſhall endeavour to act the part of a Mediator as nicely as I can, that ſo thoſe who may not perhaps be ſatisfied with the Force of my Reaſonings, yet may acknowledge the Impartiality of him that makes uſe of them. But Firſt, Of thoſe Things wherein, if the Ancients have ſo far excelled as to bring them to Perfection, it may be thought that they did it becauſe they were born before us.

CHAP. II.

Of the Moral and Political Knowledge of the Ancients and Moderns.

I Have often thought that there could not be a pleaſanter Entertainment to an inquiſitive Man, than to run over the firſt Reaſonings which he had in his Infancy, whilſt he was gathering his Collection of *Idea's*, and labouring to expreſs thoſe Sounds, by which he perceived his Mother and Nurſe made themſelves be underſtood. We ſhould then ſee the true Gradations by which Knowledge is acquired: We ſhould judge, perhaps, what is in it ſelf hard, and what eaſie, and alſo what it is that makes them ſo; and there-

by

by make a better Eſtimate of the Force of Men's Underſtandings, than can now be made. But this Reminiſcence of our firſt Idea's it is in vain to lament for, ſince it can never be had. Yet it may in general be obſerved, that the firſt Thoughts of Infants are concerning Things immediately neceſſary for Life. That Neceſſity being in ſome meaſure ſatisfied, they ſpend their Childhood in Pleaſure, if left to their own liberty, till they are grown up. Then they begin to reflect upon the Things that relate to Prudence and Diſcretion, and that more or leſs, according as their Circumſtances oblige them to carry themſelves more or leſs warily towards thoſe with whom they converſe. This is, and ever was, general to all Mankind; whereas they would not take ſo much pains to cultivate the Arts of Luxury and Magnificence, if they were not ſpurr'd on by Pride, and a Deſire of not being behind other Men. So that it is reaſonable to ſuppoſe, that, all thoſe Things which relate to Moral Knowledge, taken in its largeſt Extent, were underſtood by the ancient *Ægyptians*, *Greeks* and *Romans*, in as great Perfection as the Things themſelves were capable of. The Arts of Governing of Kingdoms and Families; of Managing the Affections and Fears of the

the unconſtant Multitude; of Ruling their Paſſions, and Diſcourſing concerning their ſeveral Ways of Working; of Making prudent Laws, and Laying down wiſe Methods by which they might be the more eaſily and effectually obeyed; of Converſing each with other; of Giving and Paying all that Reſpect which is due to Men's ſeveral Qualities: In ſhort, all that is commonly meant by knowing the World, and underſtanding Mankind; all Things neceſſary to make Men Wiſe in Counſel, Dexterous in Buſineſs, and Agreeable in Converſation, ſeem to have been in former Ages thoroughly underſtood, and ſucceſsfully practiſed.

There is, indeed, great Reaſon to fear, that in the Arts of Knavery and Deceit, the preſent Age may have refined upon the foregoing; but that is ſo little for its Honour, that common Decency does almoſt as much oblige me to throw a Veil over this Reproach, as common Intereſt does all Mankind to put an effectual Stop to its Encreaſe. But ſince we are enquiring into Excellencies, not Blemiſhes and Imperfections, there ſeems to be great Reaſon to affirm, that After-Ages had no need to invent Rules, which already were laid down to their Hands; but that their Buſineſs was chiefly to re-

examine

examine them, and to ſee which were proper for their Circumſtances, conſidering what Alterations Time ſenſibly introduces into the Cuſtoms of every Age; and then to make a wiſe Choice of what they borrowed, that ſo their Judgment might not be queſtion'd by thoſe who ſhould have the Curioſity to compare the Wiſdom of ſeveral Ages together.

If we deſcend into Particulars, theſe Obſervations will, I believe, be found to be exactly true: The minuteſt Differences between Vertue and Vice of all ſorts, are judiciouſly ſtated by *Ariſtotle*, in his *Ethicks* to *Nicomachus*; and the Workings of our Paſſions are very critically deſcribed in his Books *of Rhetorick*. *Xenophon*'s *Cyrus* ſhews that he had a right Notion of all thoſe Things which will make a Prince truly Great and Wiſe. The Characters of all thoſe Vices which are immediately taken notice of in common Converſation, are admirably drawn by *Theophraſtus*. Nothing can give a clearer *Idea* of one that has lived in Difficult Times, than the Writings of *Tacitus*; in whoſe Hiſtories, almoſt every Thing is told in ſuch a Way, as we find by our own Experience that Ill Uſage and Diſappointments lead Men to cenſure and report the Actions of their Governors. Great Skill

in

in all the Arts and Secrets of Perſuaſion appear every where in *Demoſthenes* and *Tully*'s Orations, in *Quinctilian*'s Inſtitutions, and the Orations in *Thucydides*, *Salluſt* and *Livy*. The Duties of Mankind in Civil Life, are excellently ſet forth in *Tully*'s *Offices*. Not one Paſſion of the Soul of Man has been untouch'd, and that with Life too, by ſome or other of the Ancient Poets. It would require a Volume to ſtate theſe Things in their full Light; and it has been frequently done by thoſe who have given Characters and Cenſures of Ancient Authors. So that one may juſtly conclude, that there is no one Part of Moral Knowledge, ſtrictly ſo called, which was not known by the Ancients, ſo well as by the Moderns.

But it would be a wrong Inference to conclude from thence, that the Ancients were greater Genius's than the Men of the preſent Age. For, by Sir *William Temple*'s Confeſſion (*b*), the *Chineſes* and *Peruvians* were governed by excellent Laws: And *Confucius* and *Mango Capac* may well be reckoned amongſt the Law-givers and Philoſophers of thoſe which are commonly called Learned Nations; though neither of them, eſpecially the Latter, can juſtly be ſuſpected of learning what they knew

(*b*) *Eſſay upon Heroick Vertue*, ſect. 2, 3.

knew by Communication from their Neighbours. From whence Sir *William Temple* rightly concludes, that Common Senſe is of the Growth of every Country; and that all People who unite into Societies, and form Governments, will in time make prudent Laws of all kinds; ſince it is not Strength of Imagination, nor Subtilty of Reaſoning, but Conſtancy in making Obſervations upon the ſeveral Ways of Working of Humane Nature, that firſt ſtored the World with Moral Truths, and put Mankind upon forming ſuch Rules of Practice as beſt ſuited with theſe Obſervations. There is no Wonder therefore, that in a long Series of Ages, which preceded *Socrates* and *Plato*, theſe Matters were carried to a great Perfection; for as the Neceſſity of any Thing is greater, ſo it will be more and more generally ſtudied: And as the Subject of our Enquiries is nearer to us, or eaſier to be comprehended in it ſelf; ſo it will be more thoroughly examined, and what is to be known, will be more perfectly underſtood. Both theſe concurr here: Neceſſity of Converſing with each other, put Men upon making numerous Obſervations upon the Tempers of Mankind: And their own Nature being the Thing enquired after, all Men could make their Experiments at home;

home ; which, in Conſort with thoſe made with and by other People, enabled them to make certain Concluſions of Eternal Truth, ſince Mankind varies little, if any thing, any farther than as Cuſtoms alter it, from one Age to another. Since therefore this Neceſſity always laſts, and that all the Obſervations requiſite to compleat this noble Science, as it takes in the Art of Governing Kingdoms, Families, and Men's private Perſons, cannot be made by one or two Generations, there is a plain Reaſon why ſome Nations, which wanted Opportunities of diffuſed Converſation, were more barbarous than the reſt ; and alſo, why others, which for many Ages met with no Foreign Enemies that could overturn their Conſtitutions, ſhould be capable of improving this part of Knowledge as far as *unaſſiſted Reaſon* was able to carry it.

For, after all, how weak the Knowledge of the ancient Heathens was, even here, will appear by comparing the Writings of the old Philoſophers, with thoſe Moral Rules which *Solomon* left us in the *Old Teſtament*, and which our Bleſſed Saviour and his Apoſtles laid down in the *New*. Rules ſo well ſuited to the Reaſon of Man, ſo well adapted to civilize the World, and to introduce that true Hap-

pineſs which the old Philoſophers ſo vainly ſtrove to find, that the more they are conſidered, the more they will be valued; and accordingly they have extorted even from thoſe who did not believe the Chriſtian Religion, juſt Applauſes, which were certainly unbiaſſed, becauſe, not being led by the Rewards which it propoſes, nor deterred by the Puniſhments which it threatens, they could have no Motive to commend them but their own native Excellency.

It is evident therefore, that though in ſome ſence the Moderns may be ſaid to have learned their *Politics* and *Ethics* from the Ancients, yet there is no convincing Argument that can be brought from thoſe Sciences, ſingly conſidered, that the Ancients had a greater Force of Genius than the wiſe and prudent Men of theſe later Generations. If, indeed, in all other Sciences, Mankind has for $\overline{\text{MD}}$ Years been at a full Stop, the Perfection of the Ancient *Politics* and *Ethics* may be juſtly urged, amongſt other Arguments, for the comparative Strength of their Parts; otherwiſe not.

But there are other Parts of Learning, that may ſeem capable of farther Improvement; of which, the Advocates for the Ancients do not only pretend that they

they were the Inventors, but that their Performances have never ſince been equalled, much leſs out-done; though within theſe laſt $\overline{CC}$ Years all imaginable Pains have been taken to do it; and great Rewards have been given to thoſe who have, *licèt non paſſibus æquis*, laboured to come near the Copies which were already ſet them. From whence theſe Men think it probable, that all Modern Learning is but Imitation, and that faint and flat, like the Paintings of thoſe who draw after Copies at a Third or Fourth Hand from the Life. Now, as this can only be known by an Induction of Particulars, ſo of theſe Particulars there are Two ſorts: One, of thoſe wherein the greateſt part of thoſe Learned Men who have compared Ancient and Modern Performances, either give up the Cauſe to the Ancients quite, or think, at leaſt, that the Moderns have not gone beyond them. The other of thoſe, where the Advocates for the Moderns think the Caſe ſo clear on their Side, that they wonder how any Man can diſpute it with them. *Poeſie*, *Oratory*, *Architecture*, *Painting*, and *Statuary*, are of the *Firſt* Sort: *Natural Hiſtory*, *Phyſiology*, and *Mathematics*, with all their Dependencies, are of the *Second*.

CHAP. III.

Of Ancient and Modern Eloquence and Poeſie.

IT is univerſally acknowledged, that he who has ſtudied any Subject, is a better Judge of that Subject than another Man who did never purpoſely bend his Thoughts that way, provided they be both Men of equal Parts. Yet we ſee there are many Things, whereof Men will, at firſt ſight, paſs their Judgment, and obſtinately adhere to it, though they not only know nothing of thoſe Matters, but will confeſs that it requires Parts, and Skill, and Exerciſe, to be excellent in them. This is remarkably viſible in the Cenſures which are paſſed upon Pieces of *Oratory* and *Poeſie* every Day by thoſe who have but little of that ſort of Learning themſelves; and to whom all that is ſaid of critical Skill in thoſe Things, and of a true Reliſh of what is really fine, is Jargon and Cant. And in the mean time, theſe Men do in other Things ſhew great Accuracy and Judgment, even in Subjects which require quick Apprehenſion, nice Obſervation, and

and frequent Meditation. If one ſhould ask why ſuch Men ſo frequently miſtake and differ in thoſe other Matters, the Anſwer, I think, is this: (1.) The Foundations of Eloquence of all ſorts lying in Common Sence, of which every Man is in ſome degree a Maſter, moſt ingenious Men have, without any Study, a little Inſight into theſe Things. This little Inſight betrays them immediately to declare their Opinions, becauſe they are afraid, if they ſhould not, their Reputation would be in danger. On the contrary, where the Subject is ſuch, that every Man finds he can frame no *Idea* of it in his own Mind, without a great number of Premiſes, which cannot be attained by common Converſation, all wiſe Men hold their Tongues, ſuſpect their own Abilities, and are afraid that they cannot fathom the Depth of his Knowledge with whom they converſe; eſpecially if he has a Name for Skill in thoſe Matters. And therefore, talk with ſuch Men of a Law-Caſe, or a Problem in Geometry, if they never ſtudied thoſe Things, they will frankly tell you ſo, and decline to give their Opinion. Whereas if you ſpeak to them of a Poem, a Play, or a Moral Diſcourſe upon a Subject capable of Rhetorical Ornaments, they will immediately

paſs their Cenſure, right or wrong; and Twenty Men, perhaps, ſhall give Twenty different Opinions; whilſt, in the other Caſes, ſcarce Two of the Twenty ſhall diſagree, if they are conſcious to themſelves that they have Skill enough to judge without another's help. (2.) In moſt of theſe Things our Paſſions are ſome way or other concerned; at leaſt, being accuſtomed to have them moved, we expect it, and think our ſelves diſappointed when our Expectation is deceived. Now, when a Man is to judge in Matters of this kind, he generally before-hand is pre-poſſeſſed with ſuch Paſſions as he would willingly have raiſed, or confirmed; and ſo ſpeaks as his Expectation is anſwered. But when our Paſſions do not move in theſe Matters, as they ſeldom do upon Subjects a great way off, then our Cenſures are more unanimous. For, as the Poet ſays,

Securus licet Æneam Rutulumque ferocem
Committas; nulli gravis eſt percuſſus Achilles.

So that there is no great Wonder why Men ſhould receive the Writings of the Ancients with ſo great Reſpect: For the Diſtance of Time takes off Envy; and the being

being accuſtomed from our Childhood to hear them commended, creates a Reverence. Yet though due Allowances ought to be made for theſe Pre-poſſeſſions, one has Reaſon to believe, that this Reverence for the ancient Orators and Poets is more than Prejudice. (By Orators, I underſtand all thoſe Writers in Proſe who have taken pains to beautifie and adorn their Stile.) Their Works give us a very ſolid Pleaſure when we read them. The beſt in their kind among the Moderns have been thoſe who have read the Ancients with greateſt Care, and endeavoured to imitate them with the greateſt Accuracy. The Maſters of Writing in all theſe ſeveral Ways, to this Day, appeal to the Ancients, as their Guides; and ſtill fetch Rules from them, for the Art of Writing. *Homer*, and *Ariſtotle*, and *Terence*, and *Virgil*, and *Horace*, and *Ovid*, are now ſtudied as Teachers, not barely out of Curioſity, by Modern Poets. So likewiſe are *Demoſthenes*, *Ariſtotle*, *Tully*, *Quinctilian*, and *Longinus*, by thoſe who would write finely in Proſe. There is reaſon therefore to think that in theſe Arts the Ancients may have out-done the Moderns; though neither have they been neglected in theſe later Ages, in which we have ſeen extraordinary Productions,

which the Ancients themſelves, had they been alive, would not have been aſhamed of.

If this be ſo, as I verily believe it is, ſure now (it will be objected) It is evident that the Ancients had a greater Force of Genius than the Moderns can pretend to. Will it be urged, that here alſo they had an Advantage by being born firſt? Have theſe Arts a fixed Foundation in Nature; or were they not attained to by Study? If they come by Nature, why have we heard of no Orators among the Inhabitants of the Bay of *Soldania*, or eminent Poets in *Peru*? If they are got by Study, why not now, as well as formerly, ſince Printing has made Learning cheap and eaſie? Can it be thought harder to Speak and Write like *Cicero* or *Virgil*, than to find out the Motions of the Heavens, and to calculate the Diſtances of the Stars? What can be the Reaſon of this Diſparity?

The Reaſons are ſeveral, and ſcarce one of them of ſuch a Nature as can now be helped, and yet not concluſive againſt the Comparative Strength of Underſtanding, evidently diſcernible in the Productions of the Learned Men of the preſent, and immediately foregoing Ages; to which I would here be underſtood ſtrictly

ſtrictly to confine my Notion of the word *Modern*. Theſe Reaſons I ſhall examine at large, becauſe, if they are valid, they quite take away the Force of Sir *William Temple*'s Hypotheſis; and by removing the blind Admiration now paid to the Ancient Orators and Poets, ſet it upon ſuch a Foot as will render the Reading of their Books more uſeful, becauſe leſs ſuperſtitious. They are of ſeveral ſorts; ſome relating to *Oratory*, ſome to *Poeſie*, and ſome in common to both.

I ſhall firſt ſpeak of thoſe which relate more particularly to *Poetry*, becauſe it was much the ancienteſt way of Writing in *Greece*; where their Orators owned, that they learned a great deal of what they knew, even in their own, as well as in other Parts of Learning, from their Poets. And here one may obſerve, that no Poetry can be Charming that has not a Language to ſupport it. The *Greek* Tongue has a vaſt Variety of long Words, wherein long and ſhort Syllables are agreeably intermixed together, with great Numbers of Vowels and Diphthongs in the Middle-Syllables, and thoſe very ſeldom clogged by the joining of harſh-ſounding Conſonants in the ſame Syllable: All which Things give it a great Advantage above any other Language that has

has ever yet been cultivated by Learned Men. By this Means all manner of Tunable Numbers may be formed in it with Eaſe ; as ſtill appears in the remaining *Dramatic* and *Lyric* Compoſures of the *Greek* Poets. This ſeems to have been at firſt a lucky Accident, ſince it is as viſible in *Homer*, who liv'd before the Grammarians had determined the Analogy of that Language by Rules ; which Rules were, in a very great meaſure, taken from his Poems, as the Standard ; as in thoſe Poets that came after him. And that this peculiar Smoothneſs of the *Greek* Language was at firſt Accidental, farther appears, becauſe the *Phœnician* or *Hebrew* Tongue, from whence it was formed, as moſt Learned Men agree, is a rough, unpoliſhed Tongue, abounding with ſhort Words, and harſh Conſonants : So that if one allows for ſome ſmall Agreement in the Numbers of Nouns, and Variations of Tenſes in Verbs, the two Languages are wholly of a different Make. That a derived Language ſhould be ſweeter than its Mother-Tongue, will ſeem ſtrange to none that compares the Modern *Tuſcan* with the Ancient *Latin* ; where, though their Affinity is viſible at firſt ſight, in every Sentence, yet one ſees that that derived Language actually has a Sweetneſs

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and Tunableneſs in its Compoſition, that could not be derived from its Parent; ſince nothing can impart that to another, which it has not it ſelf: And it ſhews likewiſe, that a Barbarous People, as the *Italians* were when mingled with the *Goths* and *Lombards*, may, without knowing or minding Grammatical Analogy, form a Language ſo exceedingly Muſical, that ſcarce any Art can mend it. For, in *Boccace*'s Time, who liv'd above CCC Years ago, in the earlieſt Dawnings of Polite Learning in theſe Weſtern Parts of the World, *Italian* was a formed Language, endued with that peculiar Smoothneſs which other *Europæan* Languages wanted; and it has ſince ſuffered no fundamental Alterations; not any, one ſhould think, for the better, ſince in the *Dictionary* of the Academy *della Cruſca*, *Boccace*'s Writings are conſtantly appealed to, as the Standards of the Tongue. Nay, it is ſtill diſputed among the Criticks of the *Italian Language*, whether (*c*) *Dante*, *Boccace*, *Petrarch*, and *Villani*, who were all Contemporaries, are not the Valuableſt as well as the Ancienteſt Authors they have.

(*c*) *Si Pen diverſi Taſſoni* lib. ix cap. 1

Now, when this Native Smoothneſs of the *Greek* Tongue was once diſcovered to common Ears, by the ſweetneſs of their Verſes, which depended upon a Regular Compo-

Compoſition of Long and Short Syllables, all Men paid great Reſpect to their Poets, who gave them ſo delightful an Entertainment. The wiſer Sort took this Opportunity of Civilizing the reſt, by putting all their Theological and Philoſophical Inſtructions into Verſe; which being learn'd with Pleaſure, and remembred with Eaſe, help'd to heighten and preſerve the Veneration already, upon other Scores, paid to their Poets. This encreaſed the Number of Rivals, and every one ſtriving to out-doe his Neighbour; ſome by varying their Numbers, others by chuſing Subjects likely to pleaſe, here and there ſome, one or two at leaſt of a ſort, proved excellent: And then thoſe who were the moſt extraordinary in their ſeveral Ways, were eſteemed as Standards by ſucceeding Ages; and Rules were framed by their Works, to examine other Poems of the ſame ſort. Thus *Ariſtotle* framed Rules of *Epic* Poeſie from *Homer*: Thus *Ariſtophanes*, *Menander*, *Sophocles* and *Euripides* were looked upon as Maſters in *Dramatic* Poeſie; and their Practice was ſufficient Authority. Thus *Mimnermus*, *Philetas* and *Callimachus* were the Patterns to following Imitators for *Elegy* and *Epigram*. Now, *Poetry* being a limited Art, and theſe Men, after the often-repeated Trials of others had proved

ſucceſsleſs,

ſucceſsleſs, finding the true Secret of pleaſing their Country-men, partly by their Wit and Sence, and partly by the inimitable Sweetneſs of their Numbers, there is no wonder that their Succeſſors, who were to write to a pre-poſſeſſed Audience, though otherwiſe Men of equal, perhaps greater Parts, failed of that Applauſe of which the great Maſters were already in poſſeſſion; for Copying nauſeates more in Poetry, than any thing: So that *Sannazarius* and *Buchanan*, tho' admirable Poets, are not read with that Pleaſure which Men find in *Lucretius* and *Virgil*, by any but their Country-men; becauſe they wrote in a dead Language, and ſo were frequently obliged to uſe the ſame Turns of Thought, and always the ſame Words and Phraſes, in the ſame Sence in which they were uſed before by the Original Authors; which forces their Readers too often to look back upon their Maſters; and ſo abates of that Pleaſure which Men take in *Milton*, *Cowley*, *Butler*, or *Dryden*, who wrote in their Mother-Tongue, and ſo were able to give that unconſtrained Range and Turn to their Thoughts and Expreſſions that are truly neceſſary to make a compleat Poem.

It may therefore be reaſonably believed, that the natural Softneſs, Expreſſiveneſs and Fulneſs of the *Greek* Language gave great

great Encouragement to the *Greek* Poets to labour hard, when they had ſuch manageable Matter to work upon, and when ſuch Rewards conſtantly attended their Labours. This likewiſe was a great help to their Orators, as well as their Poets; who ſoon found the Beauties of a numerous Compoſition, and left nothing undone, that could bring it to its utmoſt Perfection. But this was not ſo important a Conſideration, as alone to have encouraged the *Greeks* to cultivate their Eloquence, if the Conſtitution of their Governments had not made it neceſſary; and that Neceſſity had not obliged great Numbers of ingenious Men to take Pains about it.

Moſt part of *Greece*, properly ſo called, and of *Aſia the Leſs*, the Coaſts of *Thrace*, *Sicily*, the Iſlands in the *Mediterranean*, and a great part of *Italy*, were long divided into a very many Kingdoms and Commonwealths; and many of theſe ſmall Kingdoms, taking Example by their Neighbouring Cities that had thrown off their imperious Maſters, turned, in time, to Commonwealths, as well as they. Theſe, as all little Governments that are contiguous, being well nigh an even Match for each other, continued for many Ages in that Condition. Many of the chiefeſt were Democracies; as, the Republics of *Athens*, *Syracuſe*,

Syracuſe, *Thebes* and *Corinth*; where it was neceſſary to complement the People upon all Occaſions: So that buſie, factious Men had Opportunities enough to ſhew their Skill in Politics. Men of all Tempers, and all Deſigns, that would accuſe or defend, that would adviſe or conſult, were obliged to addreſs themſelves in ſet Harangues to the People. Intereſt therefore, and Vanity, Motives ſometimes equally powerful, made the Study of Rhetoric neceſſary; and whilſt every Man followed the ſeveral Biaſs of his own Genius, ſome few found out the true Secret of Pleaſing, in all the ſeveral Ways of Speaking well, which are ſo admirably and ſo largely diſcourſed of by the ancient Rhetoricians. *Demoſthenes* being eſteem'd beyond all his Predeceſſors, for the Correctneſs of his Stile, the Juſtneſs of his Figures, the Eaſineſs of his Narrations, and the Force of his Thoughts; his Orations were look'd upon as Standards of Eloquence by his Country-men: Which Notion of theirs effectually dampt future Endeavours of other Men, ſince here, as well as in Poetry and Painting, all Copiers will ever continue on this ſide of their Originals. And beſides, the great End of Oratory being to perſuade, wherein Regard muſt be had to the Audience, as well

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as to the Subject, if there be but one Way of doing beſt at the ſame time in both, as there can be but one in all limited Arts or Sciences, they that either firſt find it out, or come the neareſt to it, will unqueſtionably, and of Right, keep the firſt Station in Men's Eſteem, though perhaps they dare not, for fear of diſguſting the Age they live in, follow thoſe Methods which they admire ſo much, and ſo juſtly, in thoſe great Maſters that went before them.

That theſe Accidents, and not a particular Force of Genius, raiſed the *Græcian* Poeſie and Oratory, will farther appear, if we reflect upon the Hiſtory of the Riſe and Encreaſe of both thoſe Arts amongſt the *Romans:* Their Learning, as well as their Language, came originally from *Greece*; they ſaw what was done to their Hands, and *Greek* was a living Language; and ſo, by the help of Maſters, they could judge of all its Beauties. Yet, with all their Care, and Skill, and Pains, they could not, of a long time, bring their Poetry to any Smoothneſs; they found their Language was not ſo ductile, they owned it, and complained of it. It had a Majeſtick Gravity, derived from the People themſelves who ſpoke it; which made it proper for Philoſophical and Epical Poems;

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for which Reaſon, *Lucretius* and *Virgil* were able to do ſo great Things in their ſeveral Ways, their Language enabling them to give the moſt becoming Beauties to all their Thoughts. But there not being that Variety of Feet in the *Latin*, which Language, for the moſt part, abounds in *Dactyles*, *Spondees* and *Trochees*; nor that Sprightlineſs of Temper, and in-bred Gaiety in the *Romans*, which the *Greeks* are to this Day famous for, even to a Proverb, in many parts of Poetry they yielded, though not without Reluctancy, to a People whom they themſelves had conquered. Which ſhews, that there are ſome Imperfections which cannot be overcome: And when theſe Imperfections are accidental, as the Language is which every Man ſpeaks at firſt, though he has equal Parts, and perhaps greater Induſtry, yet he ſhall be thrown behind another Man who does not labour under thoſe Inconveniences; and the Diſtance between them will be greater, or leſs, according to the Greatneſs or Quality of theſe Inconveniences.

If we look into the chiefeſt Modern Languages, we ſhall find them labouring under much greater: For, the Quantities of Syllables being in a great meaſure neglected in all Modern Languages, we can-

not make use of that Variety of Feet which was anciently used by the *Greeks* and *Romans*, in Modern Poems. The Guide of Verses is not now Length of Syllable, but only Number of Feet, and Accent: Most of the *French* Accents are in the last Syllable; Ours, and the *Italian*, in the fore-going. This fits *French* for some sorts of Poems, which *Italian* and *English* are not so proper for. Again, All Syllables, except the Accented one in each Word, being now common in Modern Languages, we Northern People often make a Syllable short that has two or three Consonants in it, because we abound in Consonants: This makes *English* more unfit for some Poems, than *French* and *Italian*; which having fewer Consonants, have consequently a greater Smoothness and Flowingness of Feet, and Rapidity of Pronunciation.

I have brought these Instances out of Modern Languages, whereof Sir *William Temple* is so great a Master, to prove my first Assertion; namely, That though a very great deal is to be given to the Genius and Judgment of the Poet, which are both absolutely necessary to make a good Poem, what Tongue soever the Poet writes in; yet the Language it self has so great an Influence, that if *Homer* and

Virgil

Virgil had been *Polanders*, or *High-Dutchmen*, they would never, in all probability, have thought it worth their while to attempt the Writing of Heroick Poems; *Virgil* especially, (*d*) who began to write an Hiſtorical Poem of ſome great Actions of his Country-men; but was ſo gravell'd with the Roughneſs of the *Roman* Names, that he laid it aſide.

(*d*) *Cum res Romanas inchoaſſet, offenſus materiâ & nominum aſperitate, ad Bucolica tranſiit.* Donatus *in Vit.* Virgilii.

Now, as the *Roman* Poetry arrived to that Perfection which it had, becauſe it was ſupported by a Language, which, tho' in ſome Things inferiour to the *Greek*, had ſeveral noble and charming Beauties, not now to be found in Modern Languages; ſo the *Roman* Oratory was owing to their Government: Which makes the Parallel much more perfect: And all thoſe Reaſons alledged already for the Growth of the *Attic* Eloquence, are equally applicable to the Hiſtory of the *Roman*; ſo that there is no neceſſity of Repeating them. To which we may add, That when the *Romans* once loſt their Liberty, their Eloquence ſoon fell: And *Tacitus* (or *Quinctilian*) needed not have gone ſo far about to ſearch for Reaſons of the Decay of the *Roman* Eloquence. *Tully* left his Country and Profeſſion, after his Defence of *S. Roſcius Amerinus*; reſolving to give over Pleading,

if *Sylla*'s Death had not reſtored that Freedom which only gave Life to his Oratory: And when the Civil Wars between *Pompey* and *Cæſar* came on, he retired, becauſe his Profeſſion was ſuperſeded by a rougher Rhetoric, which commands an Attentive Audience in all Countries where it pleads.

When Orators are no longer Conſtituent Parts of a Government, or, at leaſt, when Eloquence is not an almoſt certain Step to arrive at the chiefeſt Honours in a State, the Neceſſity of the Art of Speaking, is, in a great meaſure, taken off; and as the Authority of Orators leſſens, which it will inſenſibly do, as Tyranny and Abſolute Power prevail, their Art will dwindle into Declamation, and an Affectation of Sentences, and Forms of Wit. The Old Men, who out-live their former Splendour, will, perhaps, ſet their own Scholars and Auditors right, and give them a true Reliſh of what is Great and Noble; but that will hardly continue above one or two Generations. Which may be ſuperadded as another Reaſon why there were no more *Demoſthenes's* or *Tully's*, after the *Macedonian* and *Roman* Emperors had taken away the Liberty of the *Græcian* and *Roman* Commonwealths. It is Liberty alone which inſpires Men with Lofty Thoughts,

Thoughts, and elevates their Souls to a higher Pitch than Rules of Art can direct. Books of Rhetoric may make Men Copious and Methodical; but they alone can never infuſe that true Enthuſiaſtic Rage which Liberty breaths into their Souls who enjoy it; and which, guided by a Sedate Judgment, will carry Men farther than the greateſt Induſtry, and the quickeſt Parts can go without it.

When Private Members of a Commonwealth can have Foreign Princes for their Clients, and plead their Cauſes before their Fellow-Citizens; when Men have their Underſtandings enlarged, by a long Uſe of public Buſineſs, for many Years before they ſpeak in publick; and when they know that their Auditory are Men, not only of equal Parts, and Experience in Buſineſs; but alſo many of them Men of equal, if not greater Skill in Rhetoric than themſelves: Which was the Caſe of the Old *Romans*. Theſe Men, inflamed with the mighty Honour of being Patrons to Crowned Heads, having Liberty to ſpeak any Thing that may advantage their Cauſe, and being obliged to take ſo great Pains to get up to, or to keep above ſo many Rivals, muſt needs be much more excellent Orators, than other Ages, deſtitute of ſuch concurrent Circumſtances,

though every thing elſe be equal, can poſſibly produce.

Beſides all this, the Humour of the Age in which we live is exceedingly altered: Men apprehend or ſuſpect a Trick in every Thing that is ſaid to move the Paſſions of the Auditory in *Courts of Judicature*, or in the *Parliament-Houſe*: They think themſelves affronted when ſuch Methods are uſed in Speaking, as if the Orator could ſuppoſe within himſelf, that they were to be catched by ſuch Baits. And therefore, when Men have ſpoken to the Point, in as few Words as the Matter will bear, it is expected they ſhould hold their Tongues. Even in the Pulpit, the Pomp of Rhetoric is not always commended, eſpecially here in *England*; and very few meet with Applauſe, who do not confine themſelves to ſpeak with the Severity of a Philoſopher, as well as with the Splendour of an Orator; two Things, not always conſiſtent. What a Difference in the Way of Thinking muſt this needs create in the World? Anciently, Orators made their Employment the Work of their whole Lives; and as ſuch, they followed it: All their Studies, even in other Things, were, by a ſort of Alchemy, turned into Eloquence. The Labour which they thought requiſite, is evident to any Man that

that reads *Quinctilian's Inſtitutions*, and the Rhetorical Tracts of *Cicero*. This exceedingly takes off the Wonder: Eloquence may lie in common for Ancients and Moderns; yet thoſe only ſhall be moſt Excellent that cultivate it moſt, and give it the greateſt Encouragement, who live in an Age that is accuſtomed to, and will bear nothing but Maſculine, unaffected Sence; which likewiſe muſt be cloathed with the moſt ſplendid Ornaments of Rhetoric.

Sir *William Temple* will certainly agree with me in this Concluſion, That former Ages produced greater *Orators*, and nobler *Poets*, than theſe later ones have done; though perhaps he may diſagree with me about the Way by which I came to my Concluſion; ſince hence it will follow, that the preſent Age, with the ſame Advantages, under the ſame Circumſtances, might produce a *Demoſthenes*, a *Cicero*, a *Horace*, or a *Virgil*; which, for any thing hitherto ſaid to the contrary, ſeems to be very probable.

But, though the Art of Speaking, aſſiſted by all theſe Advantages, ſeems to have been at a greater height amongſt the *Greeks* and *Romans*, than it is at preſent; yet it will not follow from thence, that every Thing which is capable of Rhetorical

rical Ornaments, ſhould, for that ſole Reaſon, be more perfect anciently than now; eſpecially if theſe be only Secondary Beauties, without which, that Diſcourſe wherein they are found may be juſtly valuable, and that in a very high Degree. So that, though, for the purpoſe, one ſhould allow the Ancient Hiſtorians to be better Orators than the Modern; yet theſe laſt may, for all that, be much better, at leaſt, equally good Hiſtorians; thoſe among them eſpecially, who have taken fitting Care to pleaſe the Ears, as well as inſtruct the Underſtandings of their Readers. Of all the Ancient Hiſtorians before *Polybius*, none ſeems to have had a right Notion of writing Hiſtory, except *Thucydides*: And therefore *Polybius*, whoſe firſt Aim was, to inſtruct his Reader, by leading him into every Place whither the Thread of his Narrative carried him, makes frequent Excuſes for thoſe Digreſſions, which were but juſt neceſſary to beget a thorough Underſtanding of the Matter of Fact of which he was then giving an Account. Theſe Excuſes ſhew that he took a new Method; and they anſwer an Objection, which might otherwiſe have been raiſed from the ſmall Numbers of extant Hiſtories that were written before his Time; as if we could make no Judgment of thoſe that

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are loſt, from thoſe that are preſerved. For, the Generality of thoſe who wrote before him, made Rhetoric their chief Aim; and therefore all Niceties of Time, and Place, and Perſon, that might hurt the Flowingneſs of their Stile, were omitted; inſtead whereof, the Great Men of their *Drama*'s, were introduced, making long Speeches; and ſuch a Gloſs was put upon every Thing that was told, as made it appear extraordinary; and whatſoever was wonderful and prodigious, was mentioned with a particular Emphaſis.

This Cenſure will not appear unjuſt to any Man who has read Ancient Hiſtorians with ordinary Care; *Polybius* eſpecially: Who, firſt of all the Ancient Hiſtorians, fixes the Time of every great Action that he mentions: Who aſſigns ſuch Reaſons for all Events, as ſeem, even at this diſtance, neither too great, nor too little: Who, in Military Matters, takes Care, not only to ſhew his own Skill, but to make his Reader a Judge, as well as himſelf: Who, in Civil Affairs, makes his Judgment of the Conduct of every People from the ſeveral Conſtitutions of their reſpective Governments, or from the Characters and Circumſtances of the Actors themſelves: And laſt of all, Who ſcrupulouſly avoids ſaying any Thing that might appear incredible

credible to Posterity; but represents Things in such a manner, as a wise Man may believe they were transacted: And yet he has neglected all that Artful Eloquence which was before so much in fashion.

If these therefore be the chiefest Perfections of a just History, and if they can only be the Effects of a great Genius, and great Study, or both; at least, not of the last, without the first, we are next to enquire whether any of the Moderns have been able to attain to them: And then, if several may be found, which in none of these Excellencies seem to yield to the noblest of all the Ancient Historians, it will not be difficult to give an Answer to Sir *William Temple*'s Question; (e) *Whether* D'Avila's *and* Strada's *Histories be beyond those of* Herodotus *and* Livy? I shall name but two; *The Memoirs of* Philip Comines, *and F.* Paul's *History of the Council of* Trent. (e) Pag. 57.

Philip Comines ought here to be mention'd, for many Reasons: For, besides that he particularly excells in those very Vertues which are so remarkable in *Polybius*, to whom *Lipsius* makes no scruple to compare him, he had nothing to help him but Strength of Genius, assisted by Observation and Experience: He owns himself, that he had no Learning; and indeed,

indeed, the thing it ſelf is evident to any Man that reads his Writings. He flouriſhed in a barbarous Age, and died juſt as Learning had croſſed the *Alpes*, to get into *France*: So that he could not, by Converſation with Scholars, have thoſe Defects which Learning cures, ſupplied. This is what cannot be ſaid of the *Thucydides's*, *Polybius's*, *Salluſts*, *Livies*, and *Tacitus's* of Antiquity. Yet, with all theſe Diſadvantages, (to which this great one ought alſo to be added, That by the Monkiſh Books then in vogue, he might ſooner be led out of the Way, than if he had none at all to peruſe,) his Stile is Maſculine and ſignificant; though diffuſe, yet not tedious; even his Repetitions, which are not over-frequent, are diverting: His Digreſſions are wiſe, proper, and inſtructing: One ſees a profound Knowledge of Mankind in every Obſervation that he makes; and that without Ill Nature, Pride, or Paſſion. Not to mention that peculiar Air of Impartiality, which runs through the whole Work; ſo that it is not eaſie to withdraw our Aſſent from every thing which he ſays. To all which I need not add, that his Hiſtory never tires, though immediately read after *Livy* or *Tacitus*.

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In F. *Paul's* Hiſtory one may alſo find the Excellencies before obſerved in *Polybius*; and it has been nicely examined by dexterous and skilful Adverſaries, who have taken the Pains to weigh every Period, and rectifie every Date. So that, beſides the Satisfaction which any other admirable Hiſtory would have afforded us, we have the Pleaſure of thinking that we may ſafely rely upon his Accounts of Things, without being miſ-guided in any one leading Particular of great moment, ſince Adverſaries, who had no Inclination to ſpare him, could not invalidate the Authority of a Book which they had ſo great a deſire to leſſen. I ſhould have taken notice of no Modern Hiſtorians beſides *D'Avila* and *Strada*, if there were as much Reaſon to believe their Narratives, as there is to commend their Skill in Writing. *D'Avila* muſt be acknowledged to be a moſt Entertaining Hiſtorian; one that wants neither Art, Genius, nor Eloquence, to render his Hiſtory acceptable. *Strada* imitates the old *Romans* ſo happily, that thoſe who can reliſh their Eloquence, will be always pleaſed with his.

Upon the whole Matter, one may poſitively ſay, That where any Thing in which Oratory can only claim a Share, has

has been equally cultivated by the Moderns, as by the Ancients; they have equalled them at leaſt, if not out-done them, ſetting aſide any particular Graces, which might as well be owing to the Languages in which they wrote, as to the Writers themſelves.

CHAP. IV.

Reflections upon Monſieur Perrault's *Hypotheſis, That Modern Orators and Poets are more Excellent than Ancient.*

WHatever becomes of the Reaſons given in the laſt Chapter, for the Excellency of Ancient Eloquence and Poetry, the Poſition it ſelf is ſo generally held, that I do not fear any Oppoſition here at home. It is almoſt an Hereſie in Wit, among our Poets, to ſet up any Modern Name againſt *Homer* or *Virgil*, *Horace* or *Terence*. So that though here and there one ſhould in Diſcourſe preferr the Writers of the preſent Age, yet ſcarce any Man among us, who ſets a Value upon his own Reputation, will venture

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to aſſert it in Print. Whether this is to be attributed to their Judgment or Modeſty, or both, I will not determine; though I am apt to believe, to both, becauſe in our Neighbour-Nation, (ſome of whoſe Writers are remarkable for a good deal of what Sir *William Temple* calls *Sufficiency*,) ſome late Authors have ſpoken much more openly.

For one of the Members of the *French Academy*, which, ſince the Cardinal *de Richelieu*'s time, has taken ſo much Pains to make the *French* Language capable of all thoſe Beauties which are ſo conſpicuous in Ancient Authors, will not allow me to go ſo far as I have done. Monſieur *Perrault*, the famous Advocate of Modern Orators and Poets, in Oratory ſets the Biſhop of *Meaux* againſt *Pericles*, (or rather, *Thucydides*,) the Biſhop of *Niſmes* againſt *Iſocrates*, F. *Bourdaloüe* againſt *Lyſias*, Monſieur *Voiture* againſt *Pliny*, and Monſieur *Balzac* againſt *Cicero*. In Poetry likewiſe he ſets Monſieur *Boileau* againſt *Horace*, Monſieur *Corneille* and Monſieur *Moliere* againſt the Ancient *Dramatic* Poets. In ſhort, though he owns that ſome amongſt the Ancients had very exalted Genius's, ſo that it may, perhaps, be very hard to find any Thing that comes near the Force of ſome of the Ancient

Ancient Pieces, in either kind, amongſt our Modern Writers; yet he affirms, that Poetry and Oratory are now at a greater height than ever they were, becauſe there have been many Rules found out ſince *Virgil*'s and *Horace*'s Time; and the old Rules likewiſe have been more carefully ſcanned than ever they were before. This Hypotheſis ought a little to be enquired into, and therefore I ſhall offer ſome few Conſiderations about this Notion. Sir *William Temple*, I am ſure, will not think this a Digreſſion; becauſe the Author *of the* Plurality of Worlds, (*f*) *by cenſuring of the Old Poetry, and giving Preference to the New, raiſed his Indignation; which no Quality among Men was ſo apt to raiſe in him as Sufficiency, the worſt Compoſition out of the Pride and Ignorance of Mankind.* (*f*) Pag. 5.

(1.) Monſieur *Perrault* takes it for granted, that *Cicero* was a better Orator than *Demoſthenes*; becauſe, living after him, the World had gone on for above Two Hundred Years, conſtantly improving, and adding new Obſervations, neceſſary to compleat his Art: And ſo by Conſequence, that the Gentlemen of the Academy muſt out-doe *Tully*, for the ſame Reaſons. This Propoſition, which is the Foundation of a great part of his Book,

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is not very eaſie to be proved; becauſe Mankind loves Variety in thoſe Things wherein it may be had ſo much, that the beſt Things, conſtantly re-iterated, will certainly diſguſt. Sometimes the Age will not bear Subjects, upon which an Orator may diſplay his full Force; he may often be obliged to little, mean Exerciſes. A Thouſand Accidents, not diſcoverable at a diſtance, may force Men to ſtretch their Inventions to ſpoil that Eloquence, which left to it ſelf, would do admirable Things. And that there is ſuch a Thing as a Decay of Eloquence in After-Ages, which have the Performances of thoſe that went before conſtantly to recurr to, and which may be ſuppoſed to pretend to Skill and Fineneſs, is evident from the Writings of *Seneca*, and the Younger *Pliny*, compared with *Tully*'s; And from a Diſcourſe written in *Tacitus*'s Time, upon this very Subject, wherein the Author, taking it for granted that the *Roman* Eloquence was ſunk, enquires, with a World of Wit and Spirit, into the Reaſons of its Decay. One great Inſtance which Monſieur *Perrault* alledges of his ſuppoſed want of Art in the Ancients, is want of Method in ſetting down their Thoughts, even when one would think they ſhould have taken the greateſt Care. This Accuſation is, in

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my Opinion, very groundleſs. Let *Tully*'s *Pleadings* and *Quinctilian*'s *Inſtitutions* be examined, and then let the Controverſie be decided by that Examination. And if Panegyricks and Funeral-Orations do not ſeem ſo regular, it is not becauſe Method was little underſtood, but becauſe in thoſe Diſcourſes it was not ſo neceſſary. Where Men were to reaſon ſeverely, Method was ſtrictly obſerved: And the Vertues diſcourſed upon in *Tully*'s *Offices* are as judiciouſly and clearly digeſted under their proper Heads, as the Subject-Matter of moſt Diſcourſes written by any Modern Author, upon any Subject whatſoever. It does not ſeem poſſible to contrive any Poem, whoſe Parts can have a truer, or more artful Connexion, than *Virgil*'s *Æneis*: And though it is now objected by Monſieur *Perrault*, as a Fault, that he did not carry on his Poem to the Marriage of *Æneas* and *Lavinia*, yet we may reaſonably think, that he had very good Reaſons for doing ſo; becauſe in *Auguſtus*'s Court, where thoſe ſort of Things were very well underſtood, it was received with as great Veneration as it has been ſince; and never needed the Recommendation of Antiquity, to add to its Authority. But we need not recurr to an Excuſe, or to any thing that may look like one, in

this Matter: It is a Fault in Heroic Poetry, to fetch Things from their firſt Originals: And to carry the Thread of the Narrative down to the laſt Event, is altogether as dull. As *Homer* begins not with the Rape of *Helen*, ſo he does not go ſo far as the Deſtruction of *Troy*. Men ſhould riſe from Table with ſome Appetite remaining: And a Poem ſhould leave ſome View of ſomething to follow, and not quite ſhut the Scenes; eſpecially if the remaining part of the Story be not capable of much Ornament, nor will admit of Variety. The Paſſion of Love, with thoſe that always follow upon its being diſappointed, had been ſhewn already in the Story of *Dido*. But Monſieur *Perrault* ſeems to have had his Head poſſeſſed with the *Idea* of *French* Romances; which, to be ſure, muſt never fail to end in a general Wedding.

(2.) Another of Monſieur *Perrault*'s Arguments, to prove that the Ancients did not perfect their Oratory and Poeſie, is this; That the Mind of Man, being an inexhauſtible Fund of new Thoughts and Projects, every Age added Obſervations of its own to the former Store; ſo that they ſtill encreaſed in Politeneſs, and by conſequence, their Eloquence of all ſorts, in Verſe or Proſe, muſt needs have been more

more exact. And as a Proof of this Aſſertion, he inſtances in Matters of Love; wherein the Writings of the beſt bred Gentlemen of all Antiquity, for want of Modern Gallantry, of which they had no Notion, were rude and unpoliſh'd, if compared with the Poems and Romances of the preſent Age. Here Monſieur *Perrault*'s Skill in Architecture ſeems to have deceiv'd him: For there is a wide Difference between an Art that, having no Antecedent Foundation in Nature, owes its firſt Original to ſome particular Invention, and all its future Improvements to Superſtructures raiſed by other Men upon that firſt Ground-work; and between ſuch Operations of the Mind, as are Congenial with our Natures; where Converſation will poliſh them, even without previous Intentions of doing ſo; and where the Experience of a few Ages, if aſſiſted by Books that may preſerve particular Caſes, will carry them to as great an Height as the Things themſelves are capable of. And therefore, he that now examines the Writings of the Ancient Moral Philoſophers, *Ariſtotle* for inſtance, or the *Stoics*, will find, that they made as nice Diſtinctions in all Matters relating to Vertue and Vice; and that they underſtood Humane Nature, with all its Paſſions and

Appetites, as accurately as any Philoſophers have done ſince. Beſides, it may be juſtly queſtion'd, whether what Monſieur *Perrault* calls *Politeneſs*, be not very often rather a vicious Aberration from, and Straining of Nature, than an Improvement of the Manners of the Age: If ſo, it may reaſonably be ſuppoſed, that thoſe that medled not with the Niceties of Ceremony and Breeding, before unpractiſed, rather contemned them as improper or unnatural, than omitted them through Ignorance occaſioned by the Roughneſs of the Manners of the Ages in which they lived. *Ovid* and *Tibullus* knew what Love was, in its tendereſt Motions; they deſcribe its Anxieties and Diſappointments in a manner that raiſes too too many Paſſions, even in unconcerned Hearts; they omit no probable Arts of Courtſhip and Addreſs; and keeping the Mark they aim at ſtill in view, they rather chuſe to ſhew their Paſſion, than their Wit: And therefore they are not ſo formal as the Heroes in *Pharamond* or *Caſſandra*; who, by pretending to Exactneſs in all their Methods, commit greater Improbabilities than *Amadis de Gaule* himſelf. In ſhort, (*g*) *D'Urfe*, and (*h*) *Calprenede*, and the reſt of the *French* Romancers, by over-ſtraining the String, have

(*g*) The Author of *Aſtræa*.

(*h*) The Author of *Cleopatra*.

have broke it: And one can as ſoon believe that *Varillas* and *Maimbourg* wrote the Hiſtories of great Actions juſt as they were done, as that Men ever made Love in ſuch a way as theſe *Love-and-Honour Men* deſcribe. That Simplicity therefore of the Ancients, which Monſieur *Perrault* undervalues, is ſo far from being a Mark of Rudeneſs, and Want of Complaiſance, that their Fault lay in being too Natural, in making too lively Deſcriptions of Things, where Men want no Foreign Aſſiſtance to help them to form their *Idea's*; and where Ignorance, could it be had, is more valuable than any, much more than a Critical Knowledge. But,

(3.) Since,

By that loud Trumpet which our Courage aids,
We learn, that Sound, as well as Senſe, perſuades;

the Felicity of a manageable Language, when improv'd by Men of nice Ears, and true Judgments, is greater, and goes farther to make Men Orators and Poets, than Monſieur *Perrault* ſeems willing to allow; though there is a plain Reaſon for his Unwillingneſs: The *French* Language wants Strength to temper and ſup-

port its Smoothneſs for the nobler Parts of Poeſie, and perhaps of Oratory too, though the *French* Nation wants no Accompliſhments neceſſary to make a Poet, or an Orator. Therefore their late Critics are always ſetting Rules, and telling Men what muſt be done, and what omitted, if they would be Poets. What they find they cannot do themſelves, ſhall be ſo clogg'd where they may have the Management, that others ſhall be afraid to attempt it. They are too fond of their Language, to acknowledge where the Fault lies; and therefore the chief Thing, they tell us, is, that Sence, Connexion and Method are the principal Things to be minded. Accordingly, they have tranſlated moſt of the Ancient Poets, even the *Lyrics*, into *French* Proſe; and from thoſe Tranſlations they paſs their Judgments, and call upon others to do ſo too. So that when (to uſe Sir *J. Denham*'s Compariſon) by pouring the Spirits of the Ancient Poetry from one Bottle into another, they have loſt the moſt Volatile Parts, and the reſt loſes all its reliſh; theſe Critics exclaim againſt the Ancients, as if they did not ſufficiently underſtand Poetical Chymiſtry. This is ſo great a Truth, that even in Oratory it holds, though in a leſs degree. *Thucydides* therefore has

hard

hard Measure, to be compar'd with the Bishop of *Meaux*, when his Orations are turned into another Language, whilst Monsieur *de Meaux*'s stands unaltered; for, though Sence is Sence in every Tongue, yet all Languages have a peculiar Way of expressing the same Things; which is lost in Translations, and much more in Monsieur *D'Ablancourt*'s, who professed to mind two very different Things at once; to Translate his Author, and to Write elegant Books in his own Language; which last he has certainly done; and he knew that more Persons could find fault with his Stile, if it had been faulty, than find out Mistakes in his Rendring of *Thucydides*'s *Greek*. Besides, the Beauty of an Author's Composition, is, in all Translations, entirely lost; about which the Ancients were superstitiously exact, (*i*) and in their elegant Prose, as much almost as in their Verse. So that a Man can have but half an *Idea* of the ancient Eloquence, and that not always faithful, who judges of it without such a Skill in *Greek* and *Latin* as can enable him to read Histories, Orations and Poems in those Languages, with Ease and Pleasure; Especially if he is not so well acquainted with the History, Learning and Customs of the Ages in which the great Men of Antiquity wrote, as to

(*i*) Vid. *Quinctil. Instit. Orat.* lib. ix. c. 4. *de Compositione.*

be able to discern the Force of the Allusions which they continually make, and which every Reader of their own Age easily understood, though their Beauty was soon lost, when once the Matters of Fact there tacitly referred to, were forgotten.

But these are Qualifications which Monsieur *Perrault* extremely wants, who has neither *Greek* nor *Latin* enough to undertake to make a Parallel between Ancient and Modern Orators and Poets. A particular Enquiry into whose Mistakes would lead me too far out of the way; and besides, the World would think me very vain, to attempt any thing of this kind, after what the Famous Monsieur *Despreaux* has done already in his *Critical Reflections upon Longinus*: For there he has given so just a Vindication of those Great Men, whom he so well knows how to imitate, that whatsoever I can say after him, will appear flat and insipid. I shall therefore rather chuse to return to my Subject.

CHAP.

CHAP. V.

Of Ancient and Modern Grammar.

GRammar is one of the Sciences which Sir *William Temple* ſays, that (*k*) *no Man ever diſputed with the Ancients.*

(*k*)

As this Aſſertion is expreſſed, it is a little ambiguous: It may be underſtood of the Skill of the Moderns in the Grammatical Analogy of *Latin* and *Greek*, or of their Skill in the *Grammar* of their Mother-Tongues. Beſides, *Grammar* may either be conſidered *Mechanically*, or *Philoſophically*. Thoſe conſider it *Mechanically*, who only examine the Idiotiſms and Proprieties of every particular Language, and lay down Rules to teach them to others. Thoſe conſider it as *Philoſophers*, who conſider Language, with the Nature of Grammatical Analogy in general, and then carry down their Speculations to thoſe particular Languages of which they are to diſcourſe; who run over the ſeveral Steps, by which every Language has altered its *Idiom*; who enquire into the ſeveral Perfections and Imperfections of thoſe Tongues with which they are acquainted, and (if they are living Languages) propoſe

propoſe Methods how to remedy them, or, at leaſt, remove thoſe Obſcurities which are thereby occaſioned in ſuch Diſcourſes where Truth is only regarded, and not Eloquence.

Now, this *Mechanical Grammar* of *Greek* and *Latin* has been very carefully ſtudied by Modern Critics. *Sanctius*, *Scioppius*, and *Gerhard Voſſius*, beſides a great number of others, who have occaſionally ſhewn their Skill in their Illuſtrations of Ancient Authors, have given evident Proofs how well they underſtood the *Latin* Tongue: So have *Caninius*, *Clenard*, *Gerhard Voſſius*, and abundance more, in *Greek*: Wherein they have gone upon ſure Grounds, ſince, beſides a great Number of Books in both Languages, upon other Subjects, abundance of Grammatical Treatiſes, ſuch as *Scholia upon Difficult Authors*, *Gloſſaries*, *Onomaſticons*, *Etymologicons*, *Rudiments of Grammar*, and the like, have been preſerved, and publiſhed by skilful Men (moſt of them at leaſt) with great Care and Accuracy. From all which there ſeems to be Reaſon to believe, that ſome Modern Critics may have underſtood the Grammatical Conſtruction of *Latin*, as well as *Varro*, or *Cæſar*; and of *Greek*, as well as *Ariſtarchus*, or *Herodian*. But this cannot be pretended to be

be a new Invention; for the Grammar of dead Languages can be only learned by Books: And ſince their Analogy can neither be encreaſed nor diminiſhed, it muſt be left as we find it.

So that when Sir *William Temple* ſays, *That no Man ever diſputed Grammar with the Ancients*; if he means, that we cannot make a new Grammar of a dead Language, whoſe Analogy has been determined almoſt $\overline{MM}$ Years, it is what can admit of no Diſpute. But if he means, that Modern Languages have not been Grammatically examined, at leaſt, not with that Care that ſome Ancient Tongues have been; that is a Propoſition which may, perhaps, be very juſtly queſtioned. And he, of all Men, ought not to have arraign'd the Modern Ignorance in *Grammar*, who puts *Delphos* for *Delphi*, every where in his *Eſſays*, tho' he knows that Proper Names borrow'd from *Latin* and *Greek* are always put in the Nominative-Caſe, in our Language. For thoſe who find fault with others, ought to be critically exact in thoſe Things at leaſt themſelves. But without making Perſonal Digreſſions, in the firſt place, it ought to be conſidered, that every Tongue has its own peculiar Form, as well as its proper Words; not communicable to, nor to be regulated by

by the Analogy of another Language: Wherefore, he is the beſt *Grammarian*, who is the perfecteſt Maſter of the Analogy of the Language which he is about; and gives the trueſt Rules, by which another Man may learn it. Next, To apply this to our own Tongue, it may be certainly affirmed, That the *Grammar* of *Engliſh* is ſo far our own, that Skill in the Learned Languages is not neceſſary to comprehend it. *Ben. Johnſon* was the firſt Man, that I know of, that did any Thing conſiderable in it: but he ſeems to have been too much poſſeſſed with the Analogy of *Latin* and *Greek*, to write a perfect Grammar of a Language whoſe Conſtruction is ſo vaſtly different; tho' he falls into a contrary Fault, when he treats of the *Engliſh Syntax*, where he generally appeals to *Chaucer* and *Gower*, who lived before our Tongue had met with any of that Poliſhing, which, within theſe laſt $\overline{CC}$ Years, has made it appear almoſt entirely New. After him, came Dr. *Wallis*; who examined the *Engliſh* Tongue like a Grammarian and a Philoſopher at once, and ſhewed great Skill in that Buſineſs: And of his *Engliſh Grammar*, one may venture to ſay, That it may be ſet againſt any Thing that is extant of the Ancients, of that kind: For, as Sir *William Temple*

ſays

ſays upon another Occaſion, there is *a Strain of Philoſophy, and curious Thought*, in his previous *Eſſay of the Formation of the Sounds of Letters* ; and of *Subtilty*, in his *Grammar*, in the reducing of our Language under Genuine Rules of Art, that one would not expect in a Book of that kind.

The Care which the *Modern Italians* have taken to cultivate and refine their Language, is hardly to be believed by a People who have been ſo careleſs of their own as the *Engliſh* have been, till within theſe laſt $\overline{XXX}$ or $\overline{XL}$ Years. Volumes have been written againſt ſome Letters, and in favour of others (*l*). Cardinal *Bembo* drew up ſuch large and exact Rules for the *Italian*, that one would have imagined they could not have received any Additions ; and yet *Caſtelvetro* made an Enlargement which was bigger than the *Cardinal*'s Original Work, to which *Salviati* thought it neceſſary to add an *Appendix* (*m*). The Academy *della Cruſca* have been above theſe $\overline{C}$ Years *ſifting* their Language ; and with how great Accuracy and Pains they have examined it, their *Vocabulary*, which has had ſeveral Impreſſions, with vaſt Augmentations, from what it was at firſt, is a convincing Proof.

(*l*) *H* and *Z*.

(*m*) Vid. *li Penſieri diverſi di Taſſoni*, l. x. c. 2.

In

In *France*, since the Institution of the *French Academy*, the *Grammar* of their own Language has been studied with great Care. *Isocrates* himself could not be more nice in the Numbers of his Periods, than these *Academicians* have been in setling the Phraseology, in fixing the Standard of Words, and in making their Sentences, as well as they could, numerous and flowing. Their *Dictionary*, which is come out at last; *Vaugelas*'s, *Bouhours*'s and *Menage*'s *Remarks upon the French Tongue*, *Richelet*'s and *Furetiere*'s *Dictionaries*, with abundance of other Books of that kind, which, though not all written by Members of the *Academy*, yet are all Imitations of the Patterns which they first set, are Evidences of this their Care. This Sir *William* somewhere owns: And though he there supposes, that these *Filers* and *Polishers* may have taken away a great part of the Strength of the Tongue, (which, in the main, is true enough,) yet that is no Objection against their Critical Skill in *Grammar*; upon which Account only their Labours are here taken notice of. So much for the *Mechanical* Part of *Grammar*.

Philosophical Grammar was never, that we know of, much minded by the Ancients. So that any great Performances of

of this ſort, are to be looked upon as Modern Additions to the Commonwealth of Learning. The moſt conſiderable Book of that kind, that I know of, is Biſhop *Wilkin's Eſſay towards a Real Character, and Philoſophical Language :* A Work, which thoſe who have ſtudied, think they can never commend enough. To this one ought to add, what may be found relating to the ſame Subject, in the Third Book of Mr. *Lock's Eſſay of Humane Underſtanding.*

CHAP. VI.

Of Ancient and Modern Architecture, Statuary, and Painting.

HItherto the *Moderns* ſeem to have had very little Reaſon to boaſt of their Acquiſitions and Improvements ; Let us ſee now what they may have hereafter. In thoſe Arts, ſure, if in any, they may challenge the Preference, which depending upon great Numbers of Experiments and Obſervations, that do not every Day occurr, cannot be ſuppoſed to be brought to Perfection in a few Ages.

Among

Among ſuch, doubtleſs, *Architecture*, *Sculpture* and *Painting* may and ought here to be reckoned; both becauſe they were extremely valued by the *Ancients*, and do ſtill keep up their juſt Price. They are likewiſe very properly taken notice of in this Place, becauſe they have always been the Entertainments of Ingenious and Learned Men, whoſe Circumſtances would give them Opportunity to lay out Money upon them, or to pleaſe themſelves with other Men's Labours. In theſe Things, if we may take Men's Judgments in their own Profeſſions, the Ancients have far out-done the Moderns. The *Italians*, whoſe Performances have been the moſt conſiderable in this kind, and who, as Genuine Succeſſors of the Old *Romans*, are not apt to undervalue what they do themſelves, have, for the moſt part, given the unconteſted Pre-eminence to the Ancient *Greek* Architects, Painters and Sculptors. Whoſe Authority we ought the rather to acquieſce in, becauſe *Michael-Angelo* and *Bernini*, two wonderful Maſters, and not a little jealous of their Honour, did always ingenuouſly declare, that their beſt Pieces were exceeded by ſome of the ancient Statues ſtill to be ſeen at *Rome*.

Here therefore I at first intended to have left off; and I thought my self obliged to resign what I believed could not be maintained, when Monsieur *Perrault's Parallel of the Ancients and Moderns* came to my Hands. His Skill in *Architecture* and *Mechanicks*, may, in all probability, be relied upon; since the *French King*, who is not over-apt to conferr Employments upon Men that do not understand how to manage them, has made him (*n*) *Chief Surveyor of his Buildings*. And his long Conversation with the finest Pieces of Antiquity, and of these Later Ages, which his Employment necessarily led him to, fitted him for judging of these Matters better than other Men. So that, though there might be great Reason not to agree to his Hypothesis *of the State of Ancient and Modern Eloquence and Poesie*; yet in Things of this Nature, where the *Mediums* of Judging are quite different, and where Geometrical Rules of Proportion, which in their own Nature are unalterable, go very far to determine the Question, his Judgment seemed to be of great weight. I shall therefore chuse rather to give a short View of what he says upon these Subjects, than to pass any Censure upon them of my own.

(*n*) *Premier Commis de la Surintendance des Batimens de France.*

Pag. 88. Of *Architecture*, he says; 'That though 'the Moderns have received the Know-'ledge of the Five Orders from the An-'cients, yet if they employ it to better 'Purposes, if their Buildings be more 'useful, and more beautiful, then they 'must be allowed to be the better Archi-'tects: For it is in Architecture, as it is 'in Oratory; as he that lays down Rules, 'when and how to use *Metaphors*, *Hy-'perbole's*, *Apostrophe's*, or any other Fi-'gures of *Rhetoric*, may very often not 'be so good an Orator as he that uses 'them judiciously in his Discourses: So 'he that teaches what a *Pillar*, an *Archi-'trave* or a *Cornice* is, and that instructs 'another in the Rules of Proportion, so 'as to adjust all the Parts of each of the 'several Orders aright, may not be so 'good an Architect as he that builds a 'magnificent Temple, or a noble Palace, 'that shall answer all those Ends for which 'such Structures are designed. That the 'chief Reason why the *Doric*, the *Ionic*, or the '*Corinthian* Models have pleased so much, 'is, partly because the Eye has been long 'accustomed to them, and partly because 'they have been made use of by Men 'who understood and followed those other 'Rules which will eternally please, upon 'the score of real Usefulness; whereas the

'Five

'Five Orders owe their Authority to
'Cuſtom, rather than to Nature. That
'theſe Univerſal Rules are; To make thoſe Pag. 95.
'Buildings which will bear it, lofty and
'wide: In Stone-work, to uſe the largeſt,
'the ſmootheſt, and the eveneſt Stones:
'To make the Joints almoſt imperceptible:
'To place the Perpendicular Parts of the
'Work exactly Perpendicular, and the
'Horizontal Parts exactly Horizontal: To
'ſupport the weak Parts of the Work by
'the ſtrong: to cut Square Figures perfect-
'ly Square, and Round Figures perfectly
'Round: To hew the whole exactly true;
'and to fix all the Corners of the Work
'evenly, as they ought to be. That theſe
'Rules, well obſerv'd, will always pleaſe
'even thoſe who never underſtood one
'ſingle Term of Art: Whereas the other
'accidental Beauties, ſuch as he ſuppoſes
'*Doric*, *Ionic*, or *Corinthian* Work to be,
'pleaſe, only becauſe they are found to-
'gether with theſe, though their being
'the moſt conſpicuous Parts of a Build-
'ing, made them be firſt obſerv'd: From
'whence Men began to fanſie Inherent
'Beauties in that, which owes the greateſt
'part of its Charms to the good Company
'in which it is taken notice of, and ſo in
'time delighted, when it was ſeen alone.
'That otherwiſe it would be impoſſible Pag. 97, 99

'that there ſhould be ſo great a Variety in
'the Aſſigning of the Proportions of the
'ſeveral Orders; no two eminent Archi-
'tects ever keeping to the ſame Meaſure,
'though they have neither ſpoiled nor
'leſſened the Beauty of their Works. That
'if we go to Particulars, we ſhall not find
'(for the purpoſe) in the *Pantheon* at *Rome*,
'which is the moſt regular, and the moſt
'magnificent ancient Building now ex-
'tant, two Pillars of a like thickneſs.
(o) *Bandeaux de la voute du Temple.* 'That (o) the Girders of the arched
'Roof do not lie full upon the great
'Columns or Pilaſters; but ſome quite
Pag. 111. Pag. 113. 'over the Cavities of the Windows
'which are underneath; others half over
'the Windows, and half upon the Co-
Pag. 114. 'lumns or Pilaſters. That the Modillons
'of the Cornice are not exactly over the
'Middle of the Chapiters of the Pillars.
'That in the Fronts of the Piazza's, the
'Number of the Modillons in Sides of equal
'length is not alike: With ſeveral In-
'ſtances of Negligence, which would now
'be thought unpardonable. That, gene-
'rally ſpeaking, in other Buildings, their
'Floors were twice as thick as their Walls;
'which loaded them exceedingly, to no
Pag. 115. 'purpoſe. That their Way of Laying
'Stones in Lozenges, was inconvenient,
'as well as troubleſome; ſince every Stone

'ſo

'ſo placed, was a Wedge to force thoſe
'aſunder on which it leaned. That they Pag. 117.
'did not underſtand the niceſt Thing in
'Architecture, which is, the Art of Cut-
'ting Stones in ſuch a manner, as that
'ſeveral Pieces might be jointed one into
'another; for want of which, they made
'their Vaults of Brick plaiſter'd over;
'and their Architraves of Wood, or of
'one ſingle Stone; which obliged them
'to ſet their Pillars cloſer to one ano-
'ther than otherwiſe had been neceſſary:
'Whereas, by this Art of Cutting Stone,
'Arches have been made almoſt flat; Stair-
'Caſes of a vaſt height have been raiſed,
'where the Spectator is at a loſs to tell
'what ſupports them; whilſt the Stones
'are jointed into each other in ſuch a man-
'ner, that they mutually bear up them-
'ſelves, without any Reſt but the Wall,
'into which the innermoſt Stones are
'faſtened. That they had not Engines to Pag. 118.
'raiſe their Stones to any conſiderable
'height; but if the Work was low, they
'carried them upon their Shoulders; if
'high, they raiſed ſloping Mounts of
'Earth level with their Work, by which
'they rolled up their Stones to what
'height they pleaſed: For, as for the
'Engines for Raiſing of Stones, in *Vitru-*
'*vius*, thoſe who underſtand Mechanics,

'are agreed, that they can never be very ser-
'viceable. That it is not the Largeneſs of a
'Building, but the well executing of a Noble
'Deſign, which commends an Architect;
'otherwiſe the *Ægyptian* Pyramids, as they
'are the greateſt, would alſo be the fineſt
'ſtructures in the World. And laſt of all;
Pag. 119, 120. 'That the *French King*'s Palace at *Verſailles*,
'and the Frontiſpiece of the *Louvre*, diſco-
'ver more true Skill in Architecture of all
'ſorts, than any thing which the Ancients
'ever performed, if we may judge of what
'is loſt, by what remains.'

What Monſieur *Perrault* ſays of the Ancients Way of Raiſing their Stone, may be confirmed by the Accounts which *Garçilaſſo de la Vega*, and others, give of the vaſt Buildings of maſſy Stone which the *Spaniards* found in *Peru*, upon their firſt Arrival. It is moſt certain, that the *Peruvians* knew not the Uſe of Iron; and by conſequence, could make no Engines very ſerviceable for ſuch a purpoſe. They ground their Stones one againſt another, to ſmooth them; and afterwards they raiſed them with Leavers: And thus, with Multitude of Hands they reared ſuch Structures as appeared wonderful even to Men acquainted with Modern Architecture.'

Of

Of *Sculpture*, he says; 'That we are
'to distinguish between entire Statues,
'and *Basso Relievo's*; and in entire Statues,
'between Naked and Cloathed Pieces.
'The Naked Images of the Ancients, as
'*Hercules*, *Apollo*, *Diana*, *the Gladiators*,
'*the Wrestlers*, *Bacchus*, *Laocoon*, and some
'few more, are truly admirable: They
'shew something extremely Noble, which Pag. 125.
'one wants Words for, that is not to be
'found in Modern Work: Though he
'cannot tell whether Age does not con-
'tribute to the Beauty. That if some of
'the most excellent of the Modern Pieces
'should be preserved $\overline{\text{MD}}$ or MM Years;
'or ting'd with some Chymical Water,
'that could in a short time make them
'appear Antique, it is probable they would
'be viewed with the same Veneration
'which is now payed to Ancient Statues.
'That the Naked Sculpture of single Pag. 129.
'Figures is a very noble Art indeed, but
'the simplest of any that has ever charmed
'Mankind; not being burthen'd with a
'Multiplicity of Rules, nor needing the
'Knowledge of any other Art to com-
'pleat it; since a Man that has a Genius
'and Application, wants only a beautiful
'Model in a proper Posture, which he is
'faithfully to copy: And therefore, That
'in the Cloathed Statues of the Ancients, Pag. 121,
'the 122, 123.

'the Drapery wants much of that Art 'which is discernible in some Modern 'Pieces; they could never make the 'Cloaths sit loose to the Bodies, nor ma- 'nage the Folds so as to appear easie and 'flowing, like well-made Garments upon
Pag. 129. 'living Bodies. That the *Basso Relievo's* 'of the Ancients plainly shew, that the 'Statuaries in those Days did not under- 'stand all the Precepts that are necessary 'to compleat their Art; because they 'never observed the Rules of Perspective, 'they did not lessen their Figures gradual- 'ly, to make them suitable to the Place 'where they stood, but set them almost 'all upon the same Line; so that those 'behind were as large, and as distin- 'guishable, as those before; as if they had 'been purposely mounted upon Steps, to 'be seen over one another's Heads. That
Pag. 130. 'this is visible in the *Columna Trajana*, at 'this Day, though that is the noblest an- 'cient Performance in *Basso Relievo* still 'remaining; wherein, together with some
Pag. 132. 'very beautiful Airs of some of the Heads, 'and some very happy Postures, one may 'discern that there is scarce any Art in the 'Composition of the whole, no gradual 'lessening of the *Relievo* in any part, 'with great Ignorance in Perspective in 'the whole. That the ancient Works in

'*Basso*

'*Baſſo Relievo* did not truly deſerve that Pag. 133.
'Name, being properly entire Statues, ei-
'ther ſawed down perpendicularly, from
'Head to Foot, with the fore-part faſten'd
'or glued to a flat Ground, or ſunk half
'way in: Whereas the true Art con- Pag. 134.
'ſiſts in raiſing the Figures ſo from their
'Ground, which is of the ſame Piece,
'that with two or three Inches of *Re-*
'*lievo*, they may appear like diſtinct
'Images ſunk into the Ground, ſome
'more, ſome leſs, according to the ſeveral
'Diſtances in which they ought to be
'placed.

Of *Painting*, he ſays; 'That Three Pag. 143.
'Things are neceſſary to make a perfect
'Picture; *To repreſent the Figures truly*;
'*To expreſs the Paſſions naturally*; *and, To*
'*put the whole judiciouſly together.* For
'the *Firſt*, It is neceſſary that all the
'Out-Lines be juſtly Drawn, and that
'every Part be properly Coloured. For
'the *Second*, It is neceſſary that the Painter
'ſhould hit the different Airs and Cha-
'racters of the Face, with all the Poſtures
'of the Figures, ſo as to expreſs what
'they do, and what they think. *The*
'*whole is judiciouſly put together*, when
'every ſeveral Figure is ſet in the Place
'in which we ſee it, for a particular Pur-
'poſe; and the Colouring gradually
'weakened,

'weakened, ſo as to ſuit that part of the 'Plain in which every Figure appears. 'All which is as applicable to the ſeveral 'Parts of a Picture that has but one Fi- 'gure, as to the ſeveral Figures in a
Pag. 135. 'Picture that has more. That if we 'judge of Ancient and Modern Paintings 'by this Rule, we may divide them into 'Three Claſſes: The Firſt takes in the 'Age of *Zeuxis*, *Apelles*, *Timanthes*, and 'the reſt that are ſo much admired in An- 'tiquity. The Second takes in the Age 'of *Raphaël*, *Titian*, *Paul Veroneſe*, and 'thoſe other great Maſters that flouriſhed 'in *Italy* in the laſt Age. The Third con- 'tains the Painters of our own Age, ſuch 'as *Pouſſin*, *Le Brun*, and the like. That if 'we may judge of the Worth of the Painters 'of the Firſt Claſſe, by the Commendations 'which have been given them, we have 'Reaſon to ſay, either that their Admirers 'did not underſtand Painting well, or 'that themſelves were not ſo valuable,
Pag. 136. 'or both. That whereas *Zeuxis* is ſaid to 'have painted a Bunch of Grapes ſo natu- 'rally, that the Birds peck'd at them;
Pag. 138. 'Cooks have, of late Years, reached at 'Partridges and Capons, painted in Kit- 'chins; which has made By-ſtanders ſmile, 'without raiſing the Painter's Reputation 'to any great height. That the Contention

'between

'between *Protogenes* and *Apelles* ſhewed the Infancy of their Art: *Apelles* was wonderfully applauded for Drawing a very fine Stroke upon a Cloth: *Protogenes* drew a Second over that, in a different Colour; which *Apelles* ſplit into two, by a Third. Yet this was not ſo much as what *Giotto* did, who lived in the Beginning of the Reſtoration of Painting in *Italy*, who drew, without Compaſſes, with a ſingle Stroke of a Pencil, upon a Sheet of Paper, an O, ſo exquiſitely round, that it is ſtill Proverbial among the *Italians*, when they would deſcribe a Man that is egregiouſly ſtupid, to ſay, *That he is as round as the* O *of* Giotto. That when *Pouſſin's* Hand ſhook ſo much, that he could ſcarce manage his Pencil, he painted ſome Pieces of ineſtimable Value; and yet very indifferent Painters would have divided every Line that he drew, into nine or ten Parts. That the *Chineſes*, who cannot yet expreſs Life and Paſſion in their Pieces, will draw the Hairs of the Face and Beard ſo fine, that one may part them with the Eye from one another, and tell them. Though the Ancients went much beyond all this; for the Remains of the Ancient Painting diſcover great Skill in Deſigning, great Judgment in Ordering

Pag. 139.
Pag. 141.
Pag. 142.
Pag. 150.

'of

'of the Poſtures, much Nobleneſs and Ma-
'jeſty in the Airs of the Heads; but little
'Deſign, at the ſame time; in the Mixing
'of their Colours, and none at all in the
'Perſpective, or the Placing of the Fi-
'gures. That their Colouring is all equal-
'ly ſtrong; nothing comes forward, no-
'thing falls back in their Pictures; the Fi-
'gures are almoſt all upon a Line: So that
'their Paintings appear like Pieces in *Baſſo-*
'*Relievo*, coloured; all dry and unmoveable,
'without Union, without Connexion, and
'that living Softneſs which diſtinguiſhes
'Pictures from Statues in Marble or Cop-
'per. Wherefore, ſince the Paintings of
'theſe Ancient Maſters were juſtly deſign'd,
'and the Paſſions of every ſeveral Figure
'naturally expreſſed, which are the Things
'that the generality of Judges moſt ad-
'mire, who cannot diſcern thoſe Beauties
'that reſult from a judicious Compoſition
'of the whole, ſo well as they can the
'diſtinct Beauties of the ſeveral Parts,
'there is no wonder that *Zeuxis* and *A-*
'*pelles*, and the other Ancient Maſters,
'were ſo famous, and ſo well rewarded.
'For, of the Three Things at firſt aſſigned,
'as neceſſary to a Perfect Painter, true
'Drawing, with proper Colouring, affect
'the Senſes; natural Expreſſing of the Mo-
'tions of the Soul, move the Paſſions:

'whereas

'whereas a Judicious Compoſition of the Pag. 146.
'whole, which is diſcernible in an Artful
'Diſtribution of Lights and Shades, in the
'gradual Leſſening of Figures, according
'to their reſpective Places, in making e-
'very Figure anſwer to that particular
'Purpoſe which it is intended to repre-
'ſent, affects the Underſtanding only;
'and ſo, inſtead of Charming, will rather
'diſguſt an unskilful Spectator. Such a Pag. 147.
'Man, and under this Head almoſt all
'Mankind may be comprehended, will
'contentedly forgive the groſſeſt Faults in
'Perſpective, if the Figures are but very
'prominent, and the View not darkened
'by too much Shade; which, in their
'Opinion, ſpoils all Faces, eſpecially of
'Friends, whoſe Images chiefly ſuch Men
'are deſirous to ſee.'

When he compares the Paintings of *Raphaël* and *Le Brun* together, he obſerves, 'That *Raphaël* ſeems to have had the Pag. 159.
'greater Genius of the two; that there is
'ſomething ſo Noble in his Poſtures, and
'the Airs of his Heads; ſomething ſo juſt
'in his Deſigns, ſo perfect in the Mixture
'of his Colours, that his *St. Michael* will
'always be thought the firſt Picture in
'the World, unleſs his *H. Family* ſhould
'diſpute Precedency with it. In ſhort,
'he ſays, That if we conſider the Perſons Pag. 160.

'of

'of *Raphaël* and *Le Brun*, *Raphaël* perhaps
'may be the greater Man: But if we con-
'ſider the Art, as a Collection of Rules,
'all neceſſary to be obſerved to make it
'perfect, it appears much more compleat
'in Monſieur *Le Brun*'s Pieces: For *Ra-*
'*phaël* underſtood ſo little of the gradual
'Leſſening of Light, and Weakening of
'Colours, which is cauſed by the Inter-
'poſition of the Air, that the hindermoſt
'Figures in his Pieces appear almoſt as
'plain as the foremoſt; and the Leaves of
'diſtant Trees, almoſt as viſible as of thoſe
'near at hand; and the Windows of a
'Building four Leagues off, may all be
'counted as eaſily as of one that is within
'twenty Paces. Nay, he cannot tell whe-
'ther ſome part of that Beauty, now ſo
'peculiar to *Raphaël*'s Pieces, may not,
'in a great meaſure, be owing to Time,
'which adds a real Beauty to good Paint-
'ings. For, in the Works of this kind, as
'in New-kill'd Meat, or New-gather'd
'Fruit, there is a Rawneſs and Sharpneſs,
'which Time alone concocts and ſweetens,
'by mortifying that which has too much
'Life, by weakening that which is too
'ſtrong, and by mixing the Extremities
'of every Colour entirely into one ano-
Pag. 161. 'ther. So that no Man can tell what
'will be the Beauty of *Le Brun*'s *Family*

'*of*

'*of Darius, Alexander's Triumph, the De-*
'*feat of Porus*, and ſome other Pieces of
'equal Force, when Time ſhall have done
'her Work, and ſhall have added thoſe
'Graces which are now ſo remarkable in
'the *St. Michael*, and the *H. Family*. One
'may already obſerve, that Monſieur
'*Le Brun*'s Pieces begin to ſoften; and
'that Time has, in part, added thoſe
'Graces which It alone can give, by
'ſweetning what was left on purpoſe,
'by the judicious Painter, to amuſe its
'Activity, and to keep it from the Sub-
'ſtance of the Work.' Thus far Mon-ſieur *Perrault*.

Whether his Reaſonings are juſt, I dare not determine: Thus much may very probably be inferred, That *in theſe Things alſo* the World does not Decay ſo faſt as Sir *William Temple* believes; and that *Pouſſin*, *Le Brun* and *Bernini* have made it evident by their Performances in Paint-ing and Statuary, (*p*) *That we have had Maſters in both theſe Arts, who have de-ſerved a Rank with thoſe that flouriſhed in the laſt Age, after they were again reſtored to theſe Parts of the World.*

(*p*) Pag. 52.

CHAP.

CHAP. VII.

General Reflections relating to the following Chapters: With an Account of Sir William Temple's *Hypotheſis of the Hiſtory of Learning.*

IF the bold Claims of confident and numerous Pretenders, might, becauſe of their Confidence and Numbers, be much relied on, it were an eaſie Thing to determine upon the remaining Parts of Learning, hereafter to be diſcourſed of. The generality of the Learned have given the *Ancients* the Preference in thoſe Arts and Sciences which have hitherto been conſidered: But for the Precedency in thoſe Parts of Learning which ſtill remain to be enquired into, the *Moderns* have put in their Claim, with great Briskneſs. Among this ſort, I reckon *Mathematical* and *Phyſical Sciences*, conſidered in their largeſt Extent. Theſe are Things which have no Dependence upon the Opinions of Men for their Truth; they will admit of fixed and undiſputed *Mediums* of Compariſon and Judgment: So that, though it may be always debated, who have been the

the beſt Orators, or who the beſt Poets; yet it cannot always be a Matter of Controverſie, who have been the greateſt *Geometers*, *Arithmeticians*, *Aſtronomers*, *Muſicians*, *Anatomiſts*, *Chymiſts*, *Botaniſts*, or the like; becauſe a fair Compariſon between the Inventions, Obſervations, Experiments and Collections of the contending Parties, muſt certainly put an End to the Diſpute, and give full Satisfaction to all Sides.

The Thing contended for, is, the *Knowledge of Nature*; what the Appearances are which it exhibits, and how they are exhibited; thereby to ſhew how they may be enlarged, and diverſified, and Impediments of any ſort removed. In order to this, it will be neceſſary, (1.) To find out all the ſeveral Affections and Properties of Quantity, abſtractedly conſidered; with the Proportions of its Parts and Kinds, either ſeverally conſidered, or compared and compounded with one another; either as they may be in Motion, or at Reſt: This is properly the *Mathematician's* Buſineſs. (2.) To collect great Numbers of Obſervations, and to make a vaſt Variety of Experiments upon all ſorts of Natural Bodies. And becauſe this cannot be done without proper Tools, (3.) To contrive ſuch Inſtruments, by which the

Conſtituent Parts of the Univerſe, and of all its Parts, even the moſt minute, or the moſt remote, may lie more open to our View; and their Motions, or other Affections, be better calculated and examined, than could otherwiſe have been done by our unaſſiſted Senſes. (4.) To range all the ſeveral Species of Natural Things under proper Heads; and aſſign fit Characteriſticks, or Marks, whereby they may be readily found out, and diſtinguiſhed from one another. (5.) To adapt all the Catholick Affections of Matter and Motion to all the known Appearances of Things, ſo as to be able to tell how Nature works; and, in ſome particular Caſes, to command her. This will take in *Aſtronomy*, *Mechanics*, *Optics*, *Muſic*, with the other *Phyſico-Mathematical* and *Phyſico-Mechanical* Parts of Knowledge; as alſo, *Anatomy*, *Chymiſtry*, with the whole Extent of *Natural Hiſtory*. It will help us to make a juſt Compariſon between the *Ancient* and *Modern Phyſics*; that ſo we may certainly determine who Philoſophized beſt, *Ariſtotle* and *Democritus*, or M. *Boyle* and Mr. *Newton*.

In theſe Things therefore the Compariſon is to be made, wherein one can go no higher than the Age of *Hippocrates*, *Ariſtotle* and *Theophraſtus*; becauſe the Writings

Writings of the Philoſophers before them are all loſt. It may therefore be plauſibly objected, That this is no fair Way of Proceeding, becauſe the *Ægyptians* and *Chaldæans* were Famous for many Parts of real Learning long before; from whom *Pythagoras*, *Thales*, *Plato*, and all the other *Græcian* Philoſophers, borrow'd what they knew. This Sir *William Temple* inſiſts at large upon; ſo that it will be neceſſary to examine the Claims of theſe Nations to Univerſal Learning: In doing of which, I ſhall follow Sir *William Temple*'s Method; firſt I ſhall give a ſhort Abſtract of his Hypotheſis, and then enquire how far it may be relied on.

Sir *William Temple* tells us, That the chiefeſt Argument that is produced in behalf of the Moderns, is; (*q*) 'That 'they have the Advantage of the Ancients Diſcoveries to help their own: So 'that, like Dwarfs upon Giants Shoulders, they muſt needs ſee farther than 'the Giants themſelves.' To weaken this, we are told, (*r*) 'That thoſe whom we 'call Ancients, are Moderns, if compared to 'thoſe who are ancienter than they: And 'that there were vaſt Lakes of Learning in '*Ægypt*, *Chaldæa*, *India* and *China*; where 'it ſtagnated for many Ages, till the *Greeks* 'brought Buckets, and drew it out.'

(*q*) Pag. 5.

(*r*) Pag. 6. - 10.

The Queſtion therefore which is firſt to be asked here, is, *Where are the Books and Monuments wherein theſe Treaſures were depoſited for ſo many Ages ?* And becauſe they are not to be found, Sir *William Temple* makes a doubt, (*s*) *Whether Books advance any other Science, beyond the particular Records of Actions, or Regiſters of Time.* He may reſolve it ſoon, if he enquires how far a Man can go in Aſtronomical Calculations, for which the *Chaldæans* are ſaid to be ſo Famous, without the Uſe of Letters. The *Peruvian* Antiquities, which he there alledges, for Twelve or Thirteen Generations, from *Mango Capac*, to *Atahualpa*, were not of above $\overline{D}$ Years ſtanding. The *Mexican* Accounts were not ſo old ; and yet theſe, though very rude, needed Helps to be brought down to us. The *Peruvian* Conveyances of Knowledge, according to *Garçilaſſo de la Vega*, were not purely Traditionary, but were Fringes of Cotton, of ſeveral Colours, tied and woven with a vaſt Variety of Knots, which had all determinate Meanings ; and ſo ſupplied the Uſe of Letters, in a tolerable degree : And the *Mexican* Antiquities were preſerved, after a ſort, by Pictures ; of which we have a Specimen in *Purchas*'s *Pilgrim.* So that when Sir *William Temple* urges the

(*s*) Pag. 8.

the Traditions of theſe People, to prove that Knowledge may be conveyed to Poſterity without Letters, he proves only what is not diſputed, namely, That Knowledge can be imperfectly conveyed to Poſterity without Letters; not that Tradition can preſerve Learning as well as Books, or ſomething equivalent.

But ſince Sir *William Temple* lays no great Weight upon this Evaſion, I ought not to inſiſt any longer upon it. He ſays therefore, (*t*) 'That it is a Queſtion, 'whether the Invention of Printing has 'multiplied Books, or only the Copies of 'them; ſince, if we believe that there 'were Six Hundred Thouſand Books in 'the *Ptolemæan* Library, we ſhall hardly 'pretend to equal it by any of ours, nor 'perhaps by all put together; that is, we 'ſhall ſcarce be able to produce ſo many '*Originals* that have lived any Time, and 'thereby given Teſtimony of their having 'been thought *worth preſerving*.' All this, as it is urged by Sir *William Temple*, is liable to great Exception. For, (1.) If we ſhould allow that there is no Hyperbole in the Number of Books in the *Ptolemæan* Library, yet we are not to take our Eſtimate by the common Way of Reckoning. Every Oration of *Demoſthenes* and *Iſocrates*, every Play of *Æſchylus* or

(*t*) Pag. 6.

Ariſtophanes, every Diſcourſe of *Plato* or *Ariſtotle*, was anciently called a Volume. This will leſſen the Number to us, who take whole Collections of every Author's Works in one Lump; and accordingly give Names to them in our Catalogues, if printed together, under one Title. (2.) Sir *William Temple* ſeems to take it for granted, that all theſe Books were *Originals*; that is to ſay, Books *worth preſerving*; which is more than any Man can now prove. I ſuppoſe he himſelf believes that there were Ancients of all Sorts and Sizes, as well as there are Moderns now. And he that raiſes a Library, takes in Books of all Values; ſince bad Books have their Uſes to Learned Men, as well as good ones. So that, for any Thing we know to the contrary, there might have been in this *Alexandrian* Library a great Number of (*u*) *Scribbles, that, like Muſhrooms or Flies, are born and die in ſmall Circles of Time.* (3.) The World can make a better Judgment of the Value of what is loſt, at leaſt, as far as it relates to the preſent Enquiry, than one at firſt View might perhaps imagine. The loſt Books *of the Antiquities of ſeveral Nations, of their Civil Hiſtory, of the Limits of their ſeveral Empires and Commonwealths, of their Superſtitious Rites and Ceremonies,*

(*u*) Ibid.

remonies, of their Laws and Manners, or of any Thing immediately relating to any of theſe, are not here to be conſidered; becauſe it cannot be pretended that the Moderns could know any of theſe Things, but as they were taught. So neither is what may have related to *Ethics*, *Politics*, *Poeſie* and *Oratory* here to be urged, ſince in thoſe Matters, the Worth of Ancient Knowledge has already been aſſerted. So that we are only to enquire what and how great the Loſs is of all thoſe Books upon *Natural* or *Mathematical Arguments*, which were preſerved in the *Alexandrian*, *Aſiatick* and *Roman* Libraries, or mentioned in the Writings of the Ancient Philoſophers and Hiſtorians. By which Deduction, the former Number will be yet again conſiderably leſſened.

Now, a very true Judgment of Ancient Skill in Natural Hiſtory may be formed out of *Pliny*, whoſe Extracts of Books, ſtill extant, are ſo particular for the preſent Purpoſe, that there is Reaſon to believe they were not careleſly made of thoſe that are loſt. *Galen* ſeems to have read whatever he could meet with relating to Medicine, in all its Parts: And the Opinions of Abundance of Authors, which are no where elſe preſerved, may be diſcovered out of his Books; of the

famous ones especially; whom, at every turn, he either contradicts, or produces to fortifie his own Assertions. *Ptolemee* gives an Account of the Old Astronomy, in his *Almagest*. Very many Particulars of the Inventions and Methods of Ancient Geometers are to be found in the *Mathematical Collections* of *Pappus*. The Opinions of the different Sects of Philosophers are well enough preserved in the entire Treatises of the several Philosophers who were of their Sects; or in the Discourses of others, who occasionally or expresly confute what they say. So that I am apt to think, that the *Philosophical* and *Mathematical Learning* of the Ancients is better conveyed us than the *Civil*; the Books which treated of those Subjects suiting better the Genius of several Men, and of several Nations too: For which Reason the *Arabs* translated the most considerable *Greek* Books of this kind; as, *Euclid*, *Apollonius*, *Aristotle*, *Epictetus*, *Cebes*, and Abundance more, that had written of Philosophy or Mathematicks, into their own Language; whilst they let Books of Antiquity and Civil History lie unregarded.

Sir *William Temple*'s next Enquiry, is From whence both the Ancients and Moderns have received their Knowledge? His Method

Method does not ſeem to be very natural, nor his Queſtion very proper; ſince, if Diſcoveries are once made, it is not ſo material to know who taught the ſeveral Inventors, as what theſe Inventors firſt taught others. But ſetting that aſide, the Sum of what he ſays, in ſhort, is this:

(*w*) 'The Moderns gather all their 'Learning out of Books in Univerſities; 'which are but dumb Guides, that can 'lead Men but one Way, without being 'able to ſet them right, if they ſhould 'wander from it. Theſe Books, beſides, 'are very few; the Remains of the Wri-'tings of here and there an Author, that 'wrote from the Time of *Hippocrates*, to '*M. Antoninus*, in the compaſs of Six or 'Seven Hundred Years: Whereas *Thales* 'and *Pythagoras* took another ſort of a 'Method; *Thales* acquired his Know-'ledge in *Ægypt*, *Phœnicia*, *Delphos*, and 'Crete; (*x*) *Pythagoras* ſpent Twenty-'Two Years in *Ægypt*, and Twelve Years 'more in *Chaldæa*, and then returned, 'laden with all their Stores; and not 'contented with that, went into *Æ-'thiopia*, *Arabia*, *India* and *Crete*; and 'viſited *Delphos*, and all the renowned 'Oracles in the World.

(*w*) Pag. 11, 12.

(*x*) Pag. 13, 14, 15.

'Leſt

(y) Pag. 16, 17. (y) 'Leſt we ſhould wonder why *Pythagoras* went ſo far, we are told, that 'the *Indian Brachmans* were ſo careful to 'educate thoſe who were intended for 'Scholars, that as ſoon as the Mothers 'found themſelves with Child, much 'Thought and Diligence was employed 'about their Diet and Entertainment, to 'furniſh them with pleaſant Imaginations, 'to compoſe their Mind and their Sleeps 'with the beſt Temper, during the Time 'that they carry'd their Burthen. It is 'certain, that they muſt needs have been 'very Learned, ſince they were obliged 'to ſpend Thirty Seven Years in getting 'Inſtruction: Their Knowledge was all 'Traditional; they thought the World 'was Round, and made by a Spirit; they 'believed the Tranſmigration of Souls; 'and they eſteemed Sickneſs ſuch a Mark 'of Intemperance, that when they found 'themſelves indiſpoſed, they died out of 'Shame and Sullenneſs, though ſome 'lived an Hundred and Fifty or Two Hun-

(z) Pag. 22, 23. 'dred Years. (z) Theſe *Indians* had 'their Knowledge, in all probability, 'from *China*, a Country where Learning 'had been in requeſt from the Time of '*Fohius*, their firſt King. It is to be pre-'ſumed, that they communicated of their 'Store to other Nations, though they

'them-

'themſelves have few Foot-ſteps of it remaining, beſides the Writings of *Confucius*, which are chiefly Moral and Political; becauſe one of their Kings, who 'deſired that the Memory of every Thing 'ſhould begin with himſelf, cauſed Books 'of all ſorts, not relating to Phyſic and 'Agriculture, to be deſtroyed.

(*a*) 'From *India*, Learning was carried into *Æthiopia* and *Arabia*; thence, 'by the Way of the *Red Sea*, it came into *Phœnicia*; and the *Ægyptians* learn'd 'it of the *Æthiopians*. (*a*) Pag. 21.

This is a ſhort Account of the Hiſtory of Learning, as Sir *William Temple* has deduced it from its moſt ancient Beginnings. The Exceptions which may be made againſt it are many, and yet more againſt the Concluſions which he draws from it. For, though it be certain that the *Ægyptians* had the Grounds and Elements of moſt parts of real Learning among them earlier than the *Greeks*, yet that is no Argument why the *Græcians* ſhould not go beyond their Teachers, or why the Moderns might not out-doe them both.

Before I examine Sir *William Temple*'s Scheme, Step by Step, I ſhall offer, as the Geometers do, ſome few Things as *Poſtulata*; which are ſo very plain, that they

they will be aſſented to as ſoon as they are propoſed. (1.) That all Men who make a Myſtery of Matters of Learning, and induſtriouſly oblige their Scholars to conceal their Dictates, give the World great Reaſon to ſuſpect that their Knowledge is all Juggling and Trick. (2.) That he that has only a Moral Perſuaſion of the Truth of any Propoſition, which is capable of Natural Evidence, cannot ſo properly be eſteemed the Inventor, or the Diſcoverer rather, of that Propoſition, as another Man, who, though he lived many Ages after, brings ſuch Evidences of its Certainty, as are ſufficient to convince all competent Judges; eſpecially when his Reaſonings are founded upon Obſervations and Experiments drawn from, and made upon the Things Themſelves. (3.) That no Pretences to greater Meaſures of Knowledge, grounded upon Accounts of Long Succeſſions of Learned Men in any Country, ought to gain Belief, when ſet againſt the Learning of other Nations, which make no ſuch Pretences, unleſs Inventions and Diſcoveries anſwerable to thoſe Advantages, be produced by their Advocates. (4.) That we cannot judge of Characters of Things and Perſons at a great Diſtance, when given at Second-hand, unleſs we knew exactly how

how capable thoſe Perſons, from whom ſuch Characters were firſt taken, were to paſs a right Judgment upon ſuch ſubjects; and alſo the particular Motives that biaſſed them to paſs ſuch Cenſures. If *Archimedes* ſhould, upon his own Knowledge, ſpeak with Admiration of the *Ægyptian* Geometry, his Judgment would be very conſiderable: But if he ſhould ſpeak reſpectfully of it, only becauſe *Pythagoras* did ſo before him, it might, perhaps, ſignifie but very little. (5.) That exceſſive Commendations of any Art or Science whatſoever, as alſo of the Learning of any particular Men or Nations, only prove that the Perſons who give ſuch Characters never heard of any Thing or Perſon that was more excellent in that Way; and therefore that Admiration may be as well ſuppoſed to proceed from their own Ignorance, as from the real Excellency of the Perſons or Things; unleſs their reſpective Abilities are otherwiſe known.

CHAP.

CHAP. VIII.

Of the Learning of Pythagoras, *and the moſt Ancient Philoſophers of* Greece.

IN my Enquiries into the Progreſs of Learning, during its obſcurer Ages, or thoſe, at leaſt, which are ſo to us at this Diſtance, I ſhall begin with the Accounts which are given of the Learning of *Pythagoras*, rather than thoſe of the more Ancient *Græcian* Sages; becauſe his School made a much greater Figure in the World, than any of thoſe which preceded *Plato* and *Ariſtotle*. In making a Judgment upon the Greatneſs of his Performances, from the Greatneſs of his Reputation, one ought to conſider how near to his Time thoſe lived, whoſe expreſs Relations of his Life are the oldeſt we have.

Diogenes Laërtius is the ancienteſt Author extant, that has purpoſely written the Life of *Pythagoras*: According to *Menagius*'s Calculations, he lived in *M. Antoninus*'s Time: And all that we learn from *Diogenes*, is only, that we know very little certainly about *Pythagoras*. He cites, indeed, great Numbers of Books; but thoſe

ſo

ſo very diſagreeing in their Relations, that a Man is confounded with their Variety. Beſides, the *Græcians* magnified every Thing that they commended, ſo much, that it is hard to gueſs how far they may be believed, when they write of Men and Actions at any Diſtance from their own Time. *Græcia Mendax* was almoſt Proverbial amongſt the *Romans*. But by what appears from the Accounts of the Life of *Pythagoras*, he is rather to be ranked among the Law-givers, with *Lycurgus* and *Solon*, and his own two Diſciples, *Zaleucus* and *Charondas*, than amongſt thoſe who really carried Learning to any conſiderable height. Therefore, as ſome other Legiſlators had, or pretended to have, Super-natural Aſſiſtances, that they might create a Regard for their Laws in the People to whom they gave them; ſo *Pythagoras* found out ſeveral Equivalents, which did him as much Service. He is ſaid, indeed, to have lived many Years in *Ægypt*, and to have converſed much with the Philoſophers of the *Eaſt*; but if he invented the XLVII^th. Propoſition in the Firſt Book of *Euclid*, which is unanimouſly aſcribed to him by all Antiquity, one can hardly have a profound Eſteem for the Mathematical Skill of his Maſters. It is, indeed, a very noble Propoſition,

position, the Foundation of Trigonometry, of universal and various Use in those curious Speculations about Incommensurable Numbers; which his Disciples from him, and from them the *Platonists*, so exceedingly admired. But this shews the Infancy of Geometry in his Days, in that very Country which claims the Glory of Inventing it to her self. It is probable, indeed, that the *Ægyptians* might find it out; but then we ought also to take notice, that it is the only very considerable Instance of the real Learning of *Pythagoras* that is preserved. Which is the more observable, because the *Pythagoreans* paid the greatest Respect to their Master, of any Sect whatsoever; and so we may be sure that we should have heard much more of his Learning, if much more could have been said: And though the Books of *Hermippus* and *Aristoxenus* (*b*) are lost, yet *Laërtius*, who had read them, and *Porphyry* and *Jamblichus*, Men of great Reading, and diffuse Knowledge, who, after *Diogenes*, wrote the Life of the same *Pythagoras*, would not have omitted any material Thing of that kind, if they had any where met with it.

(*b*) Two very considerable Writers of *Pythagoras* his Life.

Amongst his other Journeys, Sir *William Temple* mentions *Pythagoras*'s Journey to *Delphi* (*c*). What that Voyage of his is here remembred for, it is not easie to gues.

(*c*) Pag. 15.

gueſs. *Apollo*'s Prieſteſſes are not famous for diſcovering Secrets in Natural or Mathematical Matters; and as for Moral Truths, they might as well be known, without going to *Delphi* to fetch them. *Van Dalen*, in his Diſcourſes of the Heathen Oracles, has endeavoured to prove, that they were only Artifices of the Prieſts, who gave ſuch Anſwers to Enquirers as they deſired, when they had either Power or Wealth to back their Requeſts. If *Van Dalen*'s Hypotheſis be admitted, it will ſtrengthen my Notion of *Pythagoras* very much; ſince, when he did not care to live any longer in *Samos*, becauſe of *Polycrates*'s Tyranny, and was deſirous to eſtabliſh to himſelf a laſting Reputation, for Wiſdom and Learning, amongſt the ignorant Inhabitants of *Magna Græcia*, where he ſetled upon his Retirement, he was willing to have them think that *Apollo* was of his Side. That made him eſtabliſh the Doctrine of Tranſmigration of Souls, which he brought with him out of *India*, that ſo thoſe *Italians* might think that he had a certain Reminiſcence of Things paſt, ſince his firſt Stage of Life, and the Beginning of the World; and upon that Account admire him the more: For *Laërtius* (*d*) ſays, that he pretended to remember every Thing that he had done

(*d*) *Vit. Pythag.* §. 4.

formerly, whilſt he was in thoſe other Bodies; and that he received this as an eſpecial Favour from *Mercury*, who gave him his Choice of whatſoever he deſired, except Immortality. (*e*) For theſe Reaſons alſo he obliged his Scholars to go through a Trial of Five Years, to learn Obedience by Silence: And that afterwards it was granted to ſome few, as a particular Favour, to be admitted into his Preſence. Theſe Things tended very much to impreſs a Veneration of his Perſon upon his Scholars, but ſignified nothing to the Advancement of Learning; yea, rather hindred it. Thoſe that live in the End of the World, (*f*) when every Thing, according to Sir *William Temple*, is in its Declenſion, know no Way ſo effectual to promote Learning, as much Converſation and Enquiry; and, which is more, they have no *Idea* how it can be promoted without them. The Learned Men of the preſent Age pretend to no Acquaintance with *Mercury* or *Apollo*, and can do as little in Natural Knowledge by ſuch a Sham-Revelation, as they can by Reminiſcence. If a Man ſhould, for Five Years together, read Lectures, to one that was not allowed to make Pauſes, or ask Queſtions; another Man, in the ordinary Road, by Books and Profeſſors, would learn more,

(*e*) Ibid. §. 10.

(*f*) Pag. 53.

at

at leaſt to much better purpoſe, in Six Months, than he could in all that Time.

Pythagoras was, without queſtion, a wiſe Man, well skill'd in the Arts of Civil Prudence; by which he appeaſed great Diſturbances in thoſe *Italian* Commonwealths: He had much more Knowledge than any Man of that Age in *Italy*, and knew how to make the moſt of it. He took great Delight in Arithmetical Speculations, which, as *Galileo* (*g*), not improbably, gueſſes, he involved in Myſteries, that ſo ignorant People might not deſpiſe him, for buſying himſelf in ſuch abſtruſe Matters, which they could not comprehend; and if they could have comprehended, did not know to what Uſe to put them. He took a ſure Way to have all his Studies valued, by obliging his Scholars to reſign up their Underſtandings to his Authority and Dictates. The great Simplicity of his Manners, with the Wiſdom of his Axioms and Symbols, charmed an ignorant Age, which found real Advantages, by following his peaceful Meaſures; much above thoſe that were formerly procured by Rapin and Violence. This ſeems to be a true Account of *Pythagoras*, in the Hiſtory of whoſe Reputation, there is nothing extraordinary, ſince Civilizers of Nations

(*g*) *Syſtem. Coſmic.*

have always been as much magnify'd as the Inventors of the moſt uſeful Arts: But one can no more conclude from thence, That *Pythagorus* knew as much as *Ariſtotle* or *Democritus*, than that Friar *Bacon* was as great a Mathematician as Dr. *Barrow*, or Mr. *Newton*, becauſe he knew enough to be thought a Conjurer in the Age in which he lived, and no deſpicable Perſon in any other.

But it may not be amiſs to give a Taſt of ſome of the *Pythagorean* Notions; ſuch, I mean, as they firſt ſtarted in *Europe*, and chiefly valued themſelves upon. Of this ſort, were their Arithmetical Speculations: By them they pretended to explain the Cauſes of Natural Things. The following Account of their Explication of Generation, is taken out of *Cenſorinus* and *Ariſtides*:

'Perfect Animals are generated in two 'diſtinct Periods of Time; ſome in Seven 'Months, ſome in Nine. Thoſe Gene-'rations that are compleated in Seven 'Months, proceed in this Order: In the 'firſt Six Days after Conception, the 'Humour is Milky; in the next Eight 'it is turned into Blood; which Num-'ber 8 bears the Proportion of $1\frac{1}{3}$ to 6; 'in Nine Days more it becomes Fleſh; '9 is in a Seſcuple Proportion to 6; in

'Twelve

'Twelve Days more the Embryo is form'd; '12 is double to 6: Here then are theſe 'Stages, 6, 8, 9, 12; 6 is the firſt per-'fect Number, becauſe it is the Summ 'of 1, 2, 3, the only Numbers by which 'it can be divided: Now, if we add 'theſe Four Numbers, 6, 8, 9, 12, toge-'ther, the Summ is 35; which multi-'ply'd by 6, makes 210, the Number of 'Days from the Conception to the Birth; 'which is juſt Seven Months, allowing '30 Days to a Month. A like Propor-'tion muſt be obſerved in the larger Pe-'riod of Nine Months; only 10, the 'Summ of 1, 2, 3, 4, added together, 'muſt be added to 35. which makes 45; 'that multiply'd by 6, gives 270, or 'Nine times 30, the Number of Days in 'larger Births.

If theſe fine Notions be compar'd with Dr. *Harvey*'s upon the ſame Subject, no doubt but we ſhall all be Converts to Sir *William Temple*'s Opinion, and make a vaſt Difference between the poor Obſervations of theſe later Ages, and the ſublime Flights of the Ancients.

Now, though abſtracted Mathematical Theories, which cannot be reliſhed by one that has not a tolerable Skill in Mathematicks before, might, perhaps, prudently be concealed from the Vulgar, by

the *Pythagorean* School; and in their ſtead, ſuch grave Jargon as this impoſed upon them; yet even that ſhews how little Knowledge of Nature they could pretend to. Men that aim at Glory, will omit no probable Methods to gain it, that lie in their Way; and ſolid Diſcoveries of a real Inſight into Nature, would not only have been eternally true, but have charm'd Mankind at another Rate, than ſuch dry ſapleſs Notions as ſeem at firſt View to have ſomething of Subtilty; but upon a Second Reflection, appear vain and ridiculous.

From *Pythagoras*, I ſhall go on to the Ancient Sages (*h*), *who were ſo learned in Natural Philoſophy, that they Foretold not only Eclipſes in the Heavens, but Earthquakes at Land, and Storms at Sea, great Droughts, and great Plagues, much Plenty or much Scarcity of certain ſorts of Fruits or Grain, not to mention the Magical Powers attributed to ſeveral of them, to allay Storms, to raiſe Gales, to appeaſe Commotions of People, to make Plagues ceaſe.*

(*h*) Pag. 28.

One of the ancienteſt of theſe was *Thales*: He was ſo deeply skill'd in Aſtronomy, that by the Sun's Annual Courſe he found out the Equinoxes and Solſtices: He is ſaid alſo firſt to have foretold Eclipſes; ſome Geometrical Properties

ties of Scalene Triangles are aſcribed to him, and challenged by *Euphorbus*: Nice we are ſure they were not, becauſe the Theorem of *Pythagoras* was not then found out.

When Sir *William Temple* extolled the Skill of theſe *Ancient Sages*, in foretelling Changes of Weather, he ſeems to have forgotten that he was in *England*, and fanſied that theſe Old Philoſophers were there too. The Climates of *Aſia Minor*, and *Greece*, are not ſo various as ours; and at ſome ſtated Times of the Year, of which the recurrent Winds give them conſtant Warning, they are often troubled with Earthquakes, and always with violent Tempeſts: So that by the Conjectures that we are here able to make of the Weather at ſome particular Seaſons, though we labour under ſo great Diſadvantages, we may eaſily gueſs how much certainer Predictions may be made by curious Men in ſerener and more regular Climates; which will take off from that Admiration that otherwiſe would be paid to thoſe profound Philoſophers, even though we ſhould allow that all thoſe Stories which are told of their Skill, are exactly true.

Beſides, there is Reaſon to believe that we have the Reſult of all the Obſerva-

tions of these Weather-wise Sages in *Aratus's Diosemia*, and *Virgil's Georgics*; such as those upon the Snuffs of Candles, the Croaking of Frogs, and many others quite as notable as the English Farmer's *Living Weather-Glass*, his *Red Cow that prick'd up her Tail*, an Infallible Presage of a coming Shower.

Sir *William Temple's* Method leads me now to consider, what Estimate ought to be made of the Learning of those Nations, from which he derives all the Knowledge of these Ancient *Greeks*: I shall only therefore give a short Specimen of those Discoveries, with which these Ancient Sages enriched the Ages in which they lived, as I have already done of the *Pythagoreans*, and then proceed.

Diogenes Laërtius informs us of *Empedocles's* (*i*) Skill in Magic, by the Instance of his stopping those pestilential Vapours that annoy'd his Town of *Agrigentum*. He took some Asses, and flea'd them, and hung their Hides over those Rocks that lay open to the *Etesian* Winds, which hindred their Passage, and so freed the Town. He tells another Story of *Democritus* (*k*), That he was so nice in his Observations, that he could tell whether a Young Woman were a Virgin, by her Looks, and could find it out, though she

(*i*) *Vit. Empedoclis*, §. 60.

(*k*) *Vit. Democriti*, §. 42.

ſhe had been corrupted but the Day before; and he knew, by looking upon it, that ſome Goat's Milk that was brought him, was of a Black Goat that had had but one Kid.

Theſe are Inſtances very ſeriouſly recorded by grave Authors of the *Magical Wiſdom* of the Ancients; that is, as Sir *William Temple* defines it, of that (*l*) *excelling Knowledge of Nature, and the various Powers and Qualities in its ſeveral Productions, and the Application of certain Agents to certain Patients, which, by Force of ſome peculiar Qualities, produce Effects very different from what fall under Vulgar Obſervation and Comprehenſion.* (*l*) Pag. 46.

CHAP. IX.

Of the Hiſtory and Geometry of the Ancient Ægyptians.

FRom theſe *Ancient Sages*, Sir *William Temple* goes to the Nations from which they received their Knowledge, which are *Ægypt*, *Chaldæa*, *Arabia*, *India*, and *China*; only he ſeems to invert the Order, by pretending that *China* and *India* were

were the Original Fountains from which Learning ſtill ran Weſtward. I ſhall ſpeak of them in the Order in which I have named them; becauſe the Claims of the *Ægyptians* and *Chaldæans* having a greater Foundation in Ancient Hiſtory, deſerve a more particular Examination.

It muſt be owned, That the Learning which was in the World before the *Græcian* Times was almoſt wholly confined to the *Ægyptians*, excepting what was amongſt the *Iſraelites:* And whoſoever does but conſider how difficult it is to lay the Firſt Foundations of any Science, be they never ſo ſmall, will allow them great Commendation; which if their Advocates had been contented with, there had been an End of the Controverſie. Inſtead of that, all that has ſince been added to their Foundations, has been equally challenged as originally due to them, or at leaſt once known by them, by (*m*) *Olaus Borrichius*, and ſeveral others long before Sir *William Temple* wrote upon this Argument.

(*m*) *In Hermete Ægyptio.*

Before I enter upon this Queſtion, I ſhall deſire that one Thing may be taken Notice of; which is, That the *Ægyptians* anciently pretended to ſo great Exactneſs, that every Failure is more juſtly imputable to them, than to other Nations; not only

only their Hiſtory was ſo carefully look'd after, that there was a College of Prieſts ſet up on purpoſe, whoſe chief Buſineſs it was ſucceſſively to preſerve the remarkable Matters of Fact that occurred in their own Ages, and tranſmit them undiſputed to Poſterity, but alſo, there was anſwerable Care taken to propagate and preſerve all other Parts of uſeful Learning: All their Inventions in *Phyſic*, in *Geometry*, in *Agriculture*, in *Chymiſtry*, are ſaid to have been inſcribed on Pillars, which were preſerved in their Temples; whereby not only the Memory of the Things themſelves was leſs liable to be loſt, but Men were farther encouraged to uſe their utmoſt Diligence in making Diſcoveries that might be of Publick Advantage, when they were certain of getting Immortality by theſe Inventions. This generous Cuſtom was the more to be applauded, becauſe every Man was confined to one particular Part of Learning, as his chief Buſineſs; that ſo nothing might eſcape them. One was Phyſician for the *Eyes*, another for the *Heart*, a third for the *Head* in general, a fourth for *Chirurgical* Applications, a fifth for *Womens Diſeaſes*, and ſo forth. *Anatomy*, we are told, was ſo very much cultivated by the Kings of *Ægypt*, that they particularly ordered the Bodies of dead

dead Men to be opened, that ſo Phyſic might be equally perfect in all its parts. Where ſuch Care has been uſed, proportionable Progreſſes may be expected; and the World has a Right to make a Judgment, not only according to what is now to be found, but according to what might have been found, if theſe Accounts had been ſtrictly true.

In the firſt Place therefore, we may obſerve, That *the Civil Hiſtory of* Ægypt is as lamely and as fabulouſly recorded, as of any Nation in the Univerſe: And yet the *Ægyptians* took more than ordinary Care to pay all poſſible Honours to the Dead, eſpecially their Kings; by preſerving their Bodies with Bitumen and reſinous Drugs, and by building ſumptuous Monuments to lay them in: This certainly was done to perpetuate their Memories, as well as to pay them Reſpect: It was at leaſt as Ancient as *Joſeph*'s time (*n*); how much older we know not. The *Jews*, who for another and a more ſacred Reaſon, took Care of their Dead, took equal Care to preſerve their Genealogies, and to draw an Uniform Thread of their Hiſtory from *Abraham*, down to the Deſtruction of the Second Temple. Herein they acted conſiſtently, and their Hiſtory is a ſtanding Inſtance of this their Care; whereas the

(*n*) Gen. 50. 2.

Ægyptian

Ægyptian Hiſtory is ſo very inconſiſtent a Buſineſs, that it is impoſſible to make a coherent Story out of it: Not for Want of Materials, but becauſe their Materials neither agree with themſelves, nor with the Hiſtory of any other Nation in the World.

A more certain Proof of the Deficiency of the *Ægyptian* Hiſtory cannot be produced, than that the *Time of the building of the Pyramids* was loſt when *Herodotus* was in *Ægypt*; as alſo the *Æra* of the only great Conqueror of that Nation, *Seſoſtris*. The firſt of theſe is not ſlightly to be paſſed over. Such vaſt Fabricks could not be raiſed without Numbers of Hands, and a great Expence of Time and Money, or ſomething equivalent. The *Traditions* of their Erection are indeed minutely enough ſet down in *Herodotus*, but then they are ſet down as *Traditions*; and, which is more, they are ſolely to be found in him, though he is not the only ancient Writer that mentions the Pyramids; he only names *Cheops* and *Mycerinus*, who are differently named by other Hiſtorians; and the Time when they lived, is as little agreed upon, as the Names by which they are called. The Hiſtory of a Nation can ſure be worth very little, that could not preſerve the Memory of the Names

Names at leaſt, if not the Time, of thoſe Princes, who were at ſo much Pains to be remembred, in a Place where their Monuments were ſo viſible, that no Perſon could ſail up and down the *Nile*, to or from their Capital City *Memphis*, without taking notice of them; and every Man, upon his firſt ſeeing of them, would naturally ask, what they were, by whom, and for what Intent erected. To which we may add, That theſe very Buildings are more exactly deſcribed in Mr. *Greaves*'s *Pyramidographia*, than in any ancient Author now extant.

The Difficulty of determining the Age when *Seſoſtris* lived, is another Inſtance of the Careleſneſs of the *Ægyptian* Hiſtorians. Either he was the ſame with *Sheſhak*, who Invaded *Judæa* in *Rehoboam*'s Time, (as Sir *John Marſham* (*o*) aſſerts after *Joſephus*) or not: If he was, his Time is known indeed; but then the Authority of *Manetho*, and of thoſe Pillars from which *Manetho* pretended to tranſcribe the Tables of the ſeveral Dynaſties of the *Ægyptian* Kings, is at an End: Beſides, it contradicts all the *Greek* Writers that mention *Seſoſtris*, who place him in their fabulous Age, and generally affirm, that he lived before the Expedition of the *Argonauts*, which preceded the

(*o*) *In Canone Chronico.*

the War of *Troy*. If he was not that *Sheſhak*, then the Time when the only famous Conqueror of the *Ægyptian* Nation lived is uncertain, and all that they know of him is, that *once upon a time* there was a mighty King in *Ægypt*, who conquer'd *Æthiopia*, *Arabia*, *Aſſyria*, and up to *Colchis*, with *Aſia the Leſs*, and the Iſlands of the *Ægæan* Sea, where having left Marks of his Power, he returned home again to reap the Fruits of his Labours: A Tradition which might have been preſerved without ſetting up a College at *Heliopolis* for that purpoſe.

The very Learned Mr. *Dodwell*, in his Diſcourſe *concerning the Phœnician Hiſtory of Sanchoniathon*, advances a Notion which may help to give a very probable Account of thoſe vaſt Antiquities of the *Ægyptians* pretended to by *Manetho*. He thinks that after the Hiſtory of *Moſes* was tranſlated into *Greek*, and ſo made common to the Learned Men of the neighbouring Nations, that they endeavoured to rival them by pretended Antiquities of their own, that ſo they might not ſeem to come behind a People, who till then had been ſo obſcure. This, though particularly applied by that Excellent Perſon to *Sanchoniathon*'s Hiſtory, ſeems equally forcible in the preſent Controverſie: For

Manetho

Manetho dedicated his Hiſtory to *Ptolemee Philadelphus*, at whoſe Command it was written, and wrote it about the Time that the LXXII Interpreters tranſlated the *Pentateuch*. The great Intercourſe which the *Ægyptians* and *Iſraelites* formerly had each with other, made up a conſiderable part of that Book, and occaſion'd its being the more taken notice of; ſo that this Hiſtory being injurious to the vain Pretences of that People, might very probably provoke ſome that were jealous for the Honour of their Nation, and *Manetho* among the reſt, to ſet up an Anti-Hiſtory to that of *Moſes*; and to dedicate it to the ſame Prince who employ'd the *Jews* to tranſlate the *Pentateuch*, and who ordered *Manetho* himſelf to bring him in an Account of the *Ægyptian* Antiquities, that ſo any Prejudices which *Ptolemee*, who was of another Nation himſelf, might entertain againſt their Country, might be effectually removed.

This Notion is the more probable in our Caſe, becauſe it equally holds, whether we follow Sir *John Marſham*'s Accounts, who has made the *Ægyptian* Antiquities intelligible; or whether they are left in the ſame Confuſion that they were in before. That moſt Learned Gentleman has reduced the wild Heap of *Ægyptian* Dynaſties

Dynaſties into as narrow a Compaſs as the Hiſtory of *Moſes*, according to the *Hebrew* Account, by the help of a Table of the *Theban* Kings, which he found under *Eratoſthenes*'s Name, in the Chronography of *Syncellus*. For, by that Table, he (1.) Diſtinguiſhed the Fabulous and Myſtical part of the *Ægyptian* Hiſtory, from that which ſeems to look like Matter of Fact. (2.) He reduced the Dynaſties into Collateral Families, reigning at the ſame time, in ſeveral Parts of the Countrey; which, as ſome Learned Men ſaw before, was the only Way to make thoſe Antiquities conſiſtent with themſelves, which till then were confuſed and incoherent. But it ſeems evident, by the Remains that we have of *Manetho* in *Euſebius*, and by the Accounts which we have of the *Ægyptian* Hiſtory in *Joſephus*'s Books againſt *Appion*, and in the Ancient *Chriſtian* Writers, that the *Ægyptians* in *Ptolemee*'s Time did not intend to confine themſelves within the Limits ſet by *Moſes*, but reſolved to go many Thouſand Years beyond them. If therefore *Eratoſthenes*'s Table be genuine, not only *Manetho*'s Authority ſinks, but the Pillars from whence he tranſcribed his Tables of the Kings of their ſeveral Dynaſties are Impoſtures, ſince they pretend to give ſucceſſive Ta-

bles of vaſt Numbers of Kings reigning in ſeveral Families, for many Ages; which ought to be contracted into a Period of Time, not much exceeding $\overline{\text{MM}}$ Years. If the Table of *Eratoſthenes* be not the true Rule by which the *Ægyptian* Antiquities are to be ſquared, then the former Prejudices will return in full force; and one cannot value *Tables*, and *Pillars*, and *Prieſts*, that could not fix *the Time of the Erection of the Pyramids*, and the *Age* of *Seſoſtris*, ſo certainly, as that when *Herodotus* was in the Country, they might have been able to inform him a little better than they did.

This long Enquiry into the *Ægyptian* Hiſtory, will not, I hope, be thought altogether a Digreſſion from my Subject, becauſe it weakens the *Ægyptians* Credit in a moſt ſenſible Part: For, if their Civil Hiſtory is proved to be egregiouſly fabulous, or inconſiſtent, there will be no great reaſon to value their mighty Boaſts in any thing elſe; at leaſt, not to believe them upon their own Words, without other Evidence.

In *Geometry*, the *Ægyptians* are, of all hands, allowed to have laid the firſt Foundations: The Queſtion therefore is, How far they went? Before this can be anſwer'd ſatisfactorily, one ought to enquire whether

whether *Pythagoras* and *Thales*, who went ſuch long Voyages to get Knowledge, would not have learn'd all that the *Ægyptians* could teach them? Or, whether the *Ægyptians* would willingly impart all they knew? The former, I ſuppoſe, no body queſtions: For the latter, we are to diſtinguiſh between Things that are concealed out of Intereſt, and between other Things, which, for the ſame Intereſt, are uſually made public. The *Secrets of the* Ægyptian *Theology* were not proper to be diſcovered, becauſe by thoſe Myſteries they kept the People in awe: The *Philoſopher's Stone* likewiſe, if they had been Maſters of it, might, for Gain, have been concealed: And *Medicinal Arcana* are of Advantage often-times to the Poſſeſſors, chiefly becauſe they are *Arcana*. But *Abſtracted Mathematical Theories*, which bring Glory to the Inventors, when they are communicated to thoſe that can reliſh them, and which bring no Profit when they are locked up, are never concealed from ſuch as ſhew a Deſire to learn them; provided that by ſuch a Diſcovery the firſt Inventors are not deprived of the Glory of their Inventions; which is encreaſed by publiſhing, if they have before-hand taken care to ſecure their Right. So that ſince *Pythagoras* is commended for no famous

famous Invention in Geometry, except the XLVII^th Propoſition of the Firſt Book of *Euclid*: And ſince, *Thales* is ſaid to have ſacrificed an Oxe, for finding out how to inſcribe a Rectangled Triangle within a Circle, which implies, that he learn'd it not of the *Ægyptians*, we may reaſonably conclude, that theſe two *Græcian* Philoſophers brought nothing of more Moment, in that Way, with them, out of *Ægypt*; and therefore, either the farther Diſcoveries that were made in Geometry, were made by the *Ægyptians* afterwards; or, which is more probable, they were *Græcian* Superſtructures upon *Ægyptian* Foundations. Beſides, though a Man travelled into *Ægypt*, yet it does not follow from thence, that he learn'd all his Knowledge there. Though *Archimedes* and *Euclid* were in *Ægypt*, yet they might, for all that, have been Inventors themſelves of thoſe noble Theorems which are in their Writings. In *Archimedes*'s Time, the *Greeks* were ſetled in *Alexandria*, under the *Ptolemee's*, who were then, and long before, Lords of *Ægypt*; and the Learning of *Ægypt*, at that Time, could no more be attributed to thoſe Old *Ægyptians*, who lived before the *Græcian* Conqueſt, than the Learning of Archbiſhop *Uſher*, Sir *James Ware*, and Mr. *Dodwell*, can

can be attributed to a Succeſſion of thoſe Learned *Iriſh-men* who were ſo conſiderable in the *Saxon* Times.

This laſt Conſideration is of very great Moment; for few of the *Greeks*, after *Plato*, went into *Ægypt* purely for Knowledge: And though *Plato* brought ſeveral of his Notions out of *Ægypt*, which he interwove into his Philoſophy, yet the Philoſophers of the *Alexandrian* School, who, for the moſt part, were *Platoniſts*, ſhew, by their Way of Writing, and by their frequent Citations out of *Plato's* Books, that they choſe to take thoſe Things from the *Græcians*, which, one would think, might have been had nearer Home, if they had been of the Original Growth of the Countrey. The moſt conſiderable Propoſitions in *Euclid's Elements* were attributed to the *Greeks*; and we have nothing confeſſedly *Ægyptian*, to oppoſe to the Writings of *Archimedes*, *Apollonius Pergæus*, or *Diophantus*: Whereas, had there been any Thing conſiderable, it would moſt certainly have been produced, or, at leaſt, hinted at, by ſome of thoſe very Learned *Ægyptians*, or rather later *Greeks* born in *Ægypt*, whoſe Writings that treat of the Extent of the *Ægyptian* Knowledge, are ſtill extant.

Having now examined the *History* and *Geometry* of the *Ægyptians*, it will be much easier to go through their Pretences, (or rather the Pretences of their Advocates) to Superiority in other Parts of Learning. The *Ægyptians* seem to have verified the Proverb, *That he that has but one Eye, is a Prince among those that have none.* This was Glory enough; for it is always exceedingly Honourable to be the First, where the Strife is concerning Things which are worth contending for.

CHAP. X.

Of the Natural Philosophy, Medicine and Alchemy of the Ancient Ægyptians.

THE *Ægyptian Natural Philosophy* and *Physic* shall be joined together, because there is so great an Affinity between them, that true Notions in either Science assist the other. Their *Physic*, indeed, was very famous in *Homer's* Time; and wonderful Things are told of *Hermes*, the pretended Father of the Chimical Art. But one ought to distinguish between

tween Particular Medicines, how noble ſoever, and General Theories founded upon a due Examination of the Nature of thoſe Bodies from whence ſuch Medicines are drawn, and of the Conſtitution and Fabrick of the Bodies of the Patients to whom they are to be applied, and of the incidental Circumſtances of Time and Place; which are neceſſary to be taken in by a wiſe Phyſician. The Stories of the *Weſt-Indian* Medicines are many of them very aſtoniſhing, and thoſe Salvages knew perfectly how to uſe them before ever the *Europæans* came among them, and yet they were never eſteemed able Phyſicians. This Inſtance is applicable to the preſent Queſtion: *Galen* often mentions *Ægyptian* Remedies, in his Treatiſes *of Medicines*, which are numerous and large, though he ſeldom mentions any of their Hypotheſes, from which only a Man can judge whether the *Ægyptians* were well-grounded Phyſicians, or Empiricks. This is the more remarkable, becauſe *Galen* had lived long at *Alexandria*, and commends the Induſtry of the *Alexandrians* in cultivating Anatomy, which is ſo neceſſary a Part of a Phyſician's Buſineſs.

In General therefore we may find, that all the *Ægyptian Notions of Phyſical Mat-*

ters were built *upon Aſtrological and Magical Grounds:* Either the Influence of a Particular Planet, or of ſome Tutelar Dæmon, were ſtill conſidered. Theſe Foundations are precarious and impious, and they put a ſtop to any Encreaſe of real Knowledge, which might be made upon other Principles. He that minds the Poſition of the Stars, or invokes the Aid of a Dæmon, will rarely be ſollicitous to examine nicely into the Nature of his Remedies, or the Conſtitution of his Patients, without which, none of the ancient Rational Phyſicians believed that any Man could arrive at a perfect Knowledge of their Art. So that if *Hippocrates* learn'd his Skill in *Ægypt*, as it is pretended, the *Ægyptian* Phyſicians afterwards took a very ſtupid Method to run ſo far upon Imaginary Scents, as even to loſe the Memory that they had ever purſued more Rational Methods. Thoſe that would be further ſatisfy'd of the Truth of this Matter of Fact, may find it abundantly proved in *Conringius*'s Diſcourſe (*p*) *of the Old Ægyptian Medicine.*

(*p*) *De Hermeticâ Ægyptiorum veterè & Paracelſicorum novâ Medicinâ.*

But we are told, that there was *a particular ſort of Phyſic*, uſed only *amongſt the* Ægyptian *Prieſts*, which was kept ſecret, not only from the *Greeks* that came into their Country for Knowledge, but from

from the Generality of the Natives themſelves; wherein, by the help of the *Grand-Elixir*, they could do almoſt any thing but reſtore Life to the Dead. This *Elixir*, which was a Medicine made with the Philoſophers-Stone, was a Chymical Preparation; and, if we may believe *Olaus Borrichius* (*q*), the Great and Learned *Advocate* of the *Chymical* and *Adept Philoſophers*, was the Invention of *Hermes*, who was Contemporary with *Iſis* and *Oſiris*, whoſe Age none ever yet determined. If theſe Claims are true, there is no queſtion but the *Ægyptians* underſtood Nature, at leaſt that of Metals, in a very high degree. This is *an Application of Agents, to Patients* (*r*); which, if made good, will go farther than any Aſſertion commonly brought to prove the Extent of *Ægyptian* Knowledge: And therefore, I preſume, I ſhall not be thought tedious, if I enlarge more particularly upon this Queſtion, than I have done upon the reſt; eſpecially ſince there has not been, that I know of, any direct Anſwer ever printed to *Borrichius*'s Book upon this Argument, which he wrote againſt the forementiond Diſcourſe of *Conringius*.

(*q*) *De Ortu & Progreſſu Chemiæ*; as alſo *Hermetis Ægyptiorum & Chemicorum ſapientia ab Herm. Conringii Animadverſionibus vindicata.*

(*r*) Pag. 46.

One

One may justly wonder that there should have been so noble an Art as that of turning baser Metals into Gold and Silver so long in the World, and yet that there should be so very little, if any thing, said of it in the Writings of the Ancients. To remove this Prejudice therefore, all the fabulous Stories of the *Greeks*, have, by Men of fertile Inventions, been given out to be disguised Chymical *Arcana*. *Jason's Golden Fleece*, which he brought from *Colchis*, was only *a Receipt to make the Philosopher's-Stone*; and *Medea* restored her Father-in-Law, *Æson*, to his Youth again by the *Grand Elixir*. *Borrichius* is very confident that the *Ægyptian* Kings built the Pyramids with the Treasures that their Furnaces afforded them; since, if there were so many Thousand Talents expended in Leeks and Onions, as *Herodotus* tells us there were, which must needs have been an inconsiderable Summ, in comparison of the whole Expence of the Work, one cannot imagine how they could have raised Money enough to defray the Charge of the Work any other Way. And since *Borrichius*, *Jacobus Tollius* has set out a Book called *Fortuita*, wherein he makes most of the Mythology to be Chymical Secrets.

But

But though *Borrichius* may believe that he can find ſome obſcure Hints of this *Great Work* in the Heathen Mythologiſts, and in ſome ſcatter'd Verſes of the Ancient Poets, which, according to him, they themſelves did not fully underſtand when they wrote them; yet this is certain, That the ancienteſt Chymical Writers now extant, cannot be proved to have been ſo old as the Age of *Auguſtus*. *Conringius* believes that *Zoſimus Panopolita* is the oldeſt Chymical Author that we have, whom he ſets lower than *Conſtantine the Great*. That perhaps may be a Miſtake; for *Borrichius*, who had read them both in MS. in the *French King*'s Library, brings very plauſible Arguments to prove that *Olympiodorus*, who wrote Commentaries upon ſome of the Chymical Diſcourſes of *Zoſimus*, was $\overline{CL}$ Years older than *Conſtantine*; becauſe he mentions the *Alexandrian* Library in the Temple of *Serapis*, as actually in being, which, in *Ammianus Marcellinus*'s Time, who was Contemporary with *Julian the Apoſtate*, was only talk'd of, as a thing deſtroyed long before. I don't mean that which was burnt in *Julius Cæſar*'s Time, but one afterwards erected out of the ſcatter'd Remains that were ſaved from that great Conflagration, which is mentioned by *Tertullian*,

Tertullian, under the Name of *Ptolemee*'s Library at *Alexandria*. If this *Zosimus* is the same whom *Galen* mentions, for a Remedy for Sore Eyes, in his IV^th. Book *of Topical Medicines*, then both he and *Olympiodorus* might have been considerably older, and yet have lived since our Blessed Saviour's Time. However, be their Age what it will, they wrote to themselves, and their Art was as little known afterwards as it was before: *Julius Firmicus* is the First Author that has mention'd *Alchemy*, either by Name, or by an undisputed Circumlocution; and he dedicated his Book *of Astrology* to *Constantine the Great*. *Manilius* indeed (who is suppos'd to have liv'd in *Augustus*'s Time) in the IV^th. Book of his *Astronomicon*, where he gives an Account of those that are born under *Capricorn*, has these words,

——— *scrutari cæca metalla,*
Depositas & opes, terræque exurere venas,
Materiemque manu certâ duplicarier arte:

which last Verse seems to be a Description of *Alchemy*: But, besides that the Verse is suspected to be spurious; even the Age of *Manilius* himself is not without Controversie; some making him Contemporary with the Younger *Theodosius*, and

and consequently later than *Firmicus* himself. We may expect to have this Question determined, when my most Learned Friend, Dr. *Bentley*, shall oblige the World with his *Censures* and *Emendations* of that Elegant Poet.

But if these *Græcian* Chymists should have the utmost Antiquity allowed them that *Borrichius* desires, it would signifie little to deduce their Art from *Hermes*; since Men might pretend that their Art was derived from him in *Zosimus*'s Days, and yet come several Thousand Years short of it, if we follow the Accounts of *Manetho*. Wherefore, though this is but a Negative Argument, yet it seems to be unanswerable; because if there had been such an Art, some of the *Greeks* and *Romans*, who were successively Masters of *Ægypt*, would have mention'd it, at least, before *Zosimus*'s Time. Such a Notice, whether with Approbation, or Contempt, had been sufficient to ascertain the Reality of such a Tradition. *Tacitus* (*s*) tells us, that *Nero* sent into *Africa* to find some Gold, that was pretended to be hid under Ground: This would have been an excellent Opportunity for him to have examined into this Tradition, or to have punished those, who either falsly pretended to an Art which they had not, or would

(*s*) Annal. Lib. XVI.

would not discover the true Secret; which, in his Opinion, would have been equally criminal; and had *Nero* done it, *Pliny* would have told us of it, who was very inquisitive to collect all the Stories he could find of every thing that he treats about, whereof Gold (*t*) is one that is not slightly passed over; and besides, he never omits a Story because it appears strange and incredible, if we may judge of what he has left out, by what he has put in, but often ranges the wonderful Qualities of Natural Bodies under distinct Heads, that they might be the more observed.

(*t*) Nat. Hist. Lib. XXXIII. cap. 1, 2, 3, 4.

To evade the Force of this Argument, *Borrichius* (*u*) says that the *Ægyptians* were afraid of their Conquerors, and therefore industriously concealed their Art. But there is a wide Difference between concealing the Rules and Precepts of an Art, and concealing the Memory that ever there was such an Art. If it was ever known before the *Persian* Conquest, as by his Account of the Erection of the Pyramids, which were built many Ages before *Cambyses*'s Time, it is plain he believes it was, though we should allow it to have been in few Hands, it is not credible that this Art of Making Gold should never have been pretended

(*u*) *Herm. Ægypt.*

to

to before *Diocletian*'s Time, who is reported by *Suidas* to have burnt great Numbers of Chymical Books, which gave an Account of the Proceſs. Whereas afterwards, every now and then, Footſteps of cheating *Alchemiſts* are to be met with in the *Byzantine* Hiſtorians. It was not poſſible to pretend to greater Secrecy in the Manner of their Operations, than is now to be found in all the Writings of Modern *Adept Philoſophers* (as they call themſelves.) And yet theſe Men, who will not reveal their Proceſs, would think themſelves affronted, if any Man ſhould queſtion the real Exiſtence of their Art.

But the Hypotheſis of thoſe who find Chymical Secrets in *Homer*, *Virgil*, and the reſt of the ancient Poets, is liable to ſeveral Exceptions taken notice of neither by *Conringius* nor *Borrichius*.

(1.) They ſay, that when *Jaſon* heard that the King of *Colchis* had a Book written upon a Ram's-skin, wherein was the Proceſs of the Philoſophers-Stone, he went with the *Argonauts* to fetch it. Here it may be objected, (1.) That it is not likely that *Seſoſtris*, who conquer'd *Colchis*, would ever ſuffer the *Ægyptian* Prieſts to reveal ſuch a Secret to that conquered People. *Diocletian*, according to them,

burnt

burnt all the Chymical Books that he could find in *Ægypt*, that the *Ægyptians* might not rebel, when they were deprived of that Fund, which ſupported their Wars. And *Borrichius* ſuppoſes that the *Ægyptian* Prieſts uſed this Art chiefly to ſupply the Expences of their Kings. (2.) How came *Jaſon* and the *Argonauts* not to grow richer by this Fleece? It cannot be pretended that it was concealed from them, upon the Account of its being (like the Books of the Modern *Adepti*) written in ſo obſcure a Stile, that it was unintelligible for want of a Maſter; ſince *Medea* was with *Jaſon*, who had the Secret, what or how great ſoever it was. (3.) Since the *Græcians* were not tied to Secrecy, how came their Traditions to be ſo obſcure, that thoſe Paſſages in *Apollonius Rhodius*'s *Argonautics* which are ſuppoſed to be meant of the *Grand Elixir*, were never applied to a Chymical Senſe, till the Writings of *Syneſius*, *Zoſimus*, and the other old *Græcian* Chymiſts appeared? Eſpecially ſince, (4.) *Apollonius Rhodius* himſelf was an *Alexandrian Greek*, born in *Ægypt*, and ſo could eaſily acquaint himſelf with the Traditions of that Countrey, which he, originally of another Nation, was under no Obligation to conceal.

(2.) The

(2.) The Chymiſts, at leaſt *Borrichius* for them, own *Democritus*'s Books to be genuine, upon the Credit of *Zoſimus* who quotes them: If they are, this pretended Secrecy falls to the ground: For *Democritus* affirms, That he learn'd his Art from *Oſtanes* a *Mede*, who was ſent by the Kings of *Perſia* into *Ægypt*, as Governor of the *Ægyptian* Prieſts. Then the Secret was divulged to ſome of the Conquerors of their Countrey. If ſo, why no more Tradition of it? If not the Proceſs it ſelf, yet at leaſt the Memory that once there was ſuch a Proceſs? Which would have been enough for this Purpoſe. The ſame Queſtion may be asked of *Democritus*, to whom *Oſtanes* revealed it. This will weaken *Zoſimus*'s Credit as an Antiquary, upon whoſe Aſſertion moſt of this pretended Antiquity is founded. Since at the ſame time that he objects the Secrecy of the Ancient *Ægyptian* Prieſts, as a Reaſon why the Memory of this Art was ſo little known, he owns himſelf obliged to a *Greek*, who had it from the *Ægyptians* at Second Hand.

But how will theſe Pretenders to remote Antiquity, who tell us, that *Moſes*, by his Skill in Chymiſtry, ground the Golden Calf to Powder, reconcile a Paſ-

ſage in *Theophraſtus* to their *Pretenſions*? He, ſpeaking of Quick-ſilver (*w*), ſays, that the Art of Extracting it from *Cinnabar* was not known till XC Years before his Time, when it was firſt found out by *Callias* an *Athenian*. Can we think that the *Ægyptians* could hinder theſe inquiſitive *Græcians*, who ſtaid ſo long in their Country, from knowing that there was ſuch a Metal as *Mercury*? Or could theſe *Ægyptians* make Gold without it? If they could, they might reaſonably ſuppoſe that the *Iſraelites* could make Brick without Straw, ſince they could make Gold and Silver without that, which Modern *Adepti* affirm to be the Seed of all Metals. *Theophraſtus*'s Words are too general, to admit of an Objection, as if he believed that *Callias*'s Invention ought to be limited to his own Country. This, join'd to the great Silence of the Ancients (eſpecially *Herodotus* and *Diodorus Siculus*, who dwell ſo long upon the *Ægyptian* Arts and Learning) concerning moſt of the wonderful *Phænomena* of that extravagant Metal, plainly ſhews that there were no Traditions of ſuch mighty things to be done by it, as the *Alchymiſt*'s Books are full of. *Borrichius* therefore recurrs to his old Subterfuge, *Ægyptian* Secrecy, and finds ſome doubtful at leaſt, if not fabulous,

(*w*) Lib. *de Lapidibus*.

fabulous, Stories of *Dædalus* and *Icarus*, and the Poetical Age, which he oppoſes to the poſitive Teſtimony of *Theophraſtus*. Perhaps my urging the late Diſcovery of *Mercury*, may be thought to be begging the Queſtion, ſince ſome who have written of the Philoſophers-Stone, have taught that their *Mercury* has no Affinity with common *Mercury*: Which has led many Perſons to try ſeveral extravagant Proceſſes to find it out. But *Eirenæus Philalethes*, who is look'd upon as one of the cleareſt Writers that has ever written upon this Subject, ſays expreſly, that (x) *Natural* Mercury *Philoſophically prepared, is the Philoſophical Menſtruum, and the Diſſolvent* Mercury.

(x) *Enarratio Methodica trium Gebri Medicinarum, p. 18.*

After ſo long an Enquiry into the Antiquity of this Art of Tranſmuting Metals, it will be asked perhaps, what may be thought of the Art it ſelf. I muſt needs ſay, I cannot tell what Judgment to make of it: The Pretences to Inſpiration, and that Enthuſiaſtic Cant which run through the Writings of almoſt all the *Alchymiſts*, ſeem ſo like Impoſture, that one would be tempted to think that it was only a Deſign carried on from Age to Age, to delude Mankind; and it is not eaſie to imagine why God ſhould hear the Prayers of thoſe that deſire to be Rich. If, as

they pretend, it was Zeal for the Good of Mankind that made them take such Pains to find out such noble Medicines as should free Men from the most obstinate Diseases to which our Natures are subject, why do they not communicate them, and leave the Process in Writing plainly to Posterity, if they are afraid of Danger for themselves? Concern for the Welfare of Mankind, and affected Secrecy, seem here inconsistent Things: Men of such mortified Tempers, and public Spirits, ought not to be concerned, though Gold or Silver were made as common as Lead or Tin, provided that the *Elixir* which should remove all Diseases were once known.

Though these are reasonable Prejudices against the Belief of the Truth of this Operation, yet one can hardly tell how to contradict a Tradition so general, and so very well attested (y). So many Men, methinks, could not have cheated the World successfully for so many Ages, if some had not been sincere: And, to use a Proverb in their own way, *So much Smoak could scarce have lasted so long without some Fire.* Till the Seminal Principles from which Metals are compounded are perfectly known, the

(y) Vid. *Borrichium de Ortu & Progressu Chymiæ, & Morhofii Epistolam de Transmutatione Metallorum ad Joelem Langelottum.*

the Poſſibility of the Operation cannot be diſproved: Which Principles, as all other Real Eſſences of Things, are concealed from us. But as a wiſe Man cannot, perhaps, without Raſhneſs disbelieve what is ſo confidently aſſerted, ſo he ought not to ſpend much Time and Coſt about Trying whether it will ſucceed, till ſome of the *Adepti* ſhall be ſo kind as to give him the Receipt.

By what has been ſaid, it is evident, what Opinion one ought to have of the Chymical Skill of the Ancient *Ægyptians*: Though it is moſt probable that the Art owes its Original to them from whom it receives its Name: But this Original is much too late to do Sir *William Temple*'s Hypotheſis any Service.

But it is high time to leave the *Ægyptian Phyſic*, and therefore I ſhall only add One or Two Inſtances of their *Skill in Anatomy*, and ſo paſs on. *Gellius* (*z*) and *Macrobius* (*a*) obſerve; the one from *Appion*, who wrote of the *Ægyptians*; the other from the *Ægyptian* Prieſts themſelves, that there is a particular *Nerve* that goes from the Heart to the Little-Finger of the Left-Hand, for which Reaſon they always wore Rings upon that Finger; and the Prieſts dipped that Finger in their perfumed Ointments: This being

(*z*) *Noct. Attic.* Lib. X. cap. 10.

(*a*) *Saturnal.* l. 7. cap. 13.

ing ridiculed by *Conringius*, *Borrichius* (*b*) assures us, that he always found something to countenance this Observation, upon cutting of his Nails to the quick. *Pliny* (*c*) and *Censorinus* (*d*) give this following Reason from *Dioscorides* the Astrologer, why a Man cannot live above a Hundred Years, because the *Alexandrian* Embalmers observed a constant Encrease and Diminution of Weight of the Hearts of those found Persons whom they opened, whereby they judged of their Age. They found that the Hearts of Infants of a Year old weighed two Drachms, and this Weight encreased Annually by two Drachms every Year, till Men came to the Age of Fifty Years: At which time they as gradually decreased till they came to an Hundred, when, for want of a Heart, they must necessarily die.

(*b*) *Herm. Ægypt. Præfat.*

(*c*) *Hist. Nat.* lib. xi. cap. 37.

(*d*) *De Die Natali*, cap. 17.

To these Two Instances of the *Criticalness* of *Ægyptian Anatomy*, I shall add one of *their Curiosity in Natural Enquiries*; and that is, *their Knowledge of the Cause of the Annual Overflowing of the* Nile. This, which was the constant Wonder of the Old World, was a *Phænomenon* seldom over-looked by the *Greek* Philosophers: Seven of whose Opinions are reckoned up by *Plutarch*, in the First Chapter of the Fourth Book *of his Opinions of the Philosophers*.

loſophers. If Curioſity generally attends a Deſire of Knowledge, and grows along with it, then the *Ægyptian* Prieſts were inexcuſably negligent, that they did not very early know that the Swelling of the *Nile* proceeded from the Rains that fell in *Æthiopia*, which raiſing the River at certain Seaſons, made that Overflowing of the Flats of *Ægypt*. One would think that in *Seſoſtris*'s Time the *Ægytian* Prieſts had Acceſs enough into *Æthiopia*; and whoever had once been in that Countrey, could have reſolved that Problem, without any Philoſophy. It was known indeed in *Plato*'s Time, for then the Prieſts told it to *Eudoxus*; but *Thales*, *Democritus*, and *Herodotus*, who had all enquired of the *Ægyptians*, give ſuch uncouth Reaſons, as ſhew that they only ſpoke by gueſs. *Thales* thinks that the *Eteſian* Winds blew at that Time of the Year againſt the Mouths of the River, ſo that the freſh Water finding no Vent, was beaten back upon the Land. *Democritus* ſuppoſes that the Northern Snows being melted by the Summer Heats, are drawn up in Vapours into the Air; which Vapours circulating towards the South, are, by the Coldneſs of the *Eteſian* Winds, condenſed into Rain, by which the *Nile* is raiſed. *Herodotus* thinks that an equal

Quantity of Water comes from the Fountains in Summer and Winter, only in Summer there are greater Quantities of Water drawn up by the Sun, and in Winter leſs, and ſo by conſequence all that time it overflowed. *Democritus*'s Opinion of the *Phænomenon* ſeems not amiſs, though his Hypotheſis of the Cauſe of it is wrong in all probability; yet it is plain, That *Plutarch* did not believe it to be the ſame with that which the *Ægyptian* Prieſts gave to *Eudoxus*, which is the only true one, becauſe he ſets them both down apart. The Cauſe of this wonderful *Phænomenon* could not be pretended to be a Secret; no Honour could be got by concealing a Thing, the pretended Ignorance whereof was rather a Diſgrace. Thoſe *Ægyptian* Prieſts, whoſe Buſineſs it was to gather Knowledge, muſt have had an extraordinary Love for a Sedentary Life, or have been averſe to inform themſelves from others, more than the reſt of Mankind, who would not be at the Pains either to learn what *Seſoſtris*'s Soldiers could have told them, or to go $\overline{CC}$ or $\overline{CCC}$ Miles Southward to ſearch for that, which they muſt certainly have often *reaſoned about*, if they were ſuch Philoſophers as they pretended to be.

Nay,

Nay, by the Curiosity of the *Greeks*, we are sure they did *reason about* it; they thought it as much a Wonder as we can do now; rather more, because they knew of no other Rivers that overflow at periodical Seasons like it, as some are now known to do in other Parts of *Africa*, and the *East-Indies*.

Upon the whole Matter, after a particular Search into the whole Extent of *Ægyptian* Learning, there seems to be no Reason to give the *Ægyptians* the Preeminence in point of Knowledge above all Mankind. However, considering the great Labour which is requisite to form the First Notions of any part of Learning, they deserve great Applause for what they discovered, and ought to have proportionable Grains of Allowance for what they left unfinished: Wherefore, when the Holy Scriptures (*e*) assure us, that *Moses* was skill'd in all the Learning of the *Ægyptians*, they give him the greatest Character for Humane Knowledge that could then be given to any Man. The *Ægyptian* Performances in Architecture were exceedingly wonderful, (*f*) and the Character which *Hadrian* the Emperor gives them, that they found Employments for all sorts of Persons, the Blind, the Lame, the Gouty, as well as the Strong

(*e*) Acts vii. 22.

(*f*) Vid. *Herodoti Euterpen.*

Strong and Healthy, ſhews that it was natural to the *Ægyptians* to be always buſied about ſomething uſeful. The Art of Brewing Mault-Drinks was long ago aſcribed (*g*) to the *Ægyptians* as the firſt Inventors, for which theſe Northern Nations are not a little beholding to them. Their Laws have, by thoſe who have taken the greateſt Pains (*h*) to deſtroy the Reputation of their Learning in other things, been acknowledged to be very wiſe, and worth going ſo far as *Pythagoras*, *Solon* and *Lycurgus* did to fetch them. So that if their Modern Advocates had extolled their Learning with any other Deſign than that of Diſparaging the Knowledge of the preſent Age, there would have been no Reaſon to oppoſe their Aſſertions.

(*g*) *Herodotus: Columella*, Lib. X.

(*h*) *Conringius in Medicinâ Hermeticâ.*

CHAP.

CHAP. XI.

Of the Learning of the Ancient Chaldæans *and* Arabians.

THE *Chaldæans* and the *Arabs* are the People that lie next in Sir *William Temple*'s Road. Though it is not eaſie to ſeparate what is Fabulous from what is Genuine in the Antiquities of theſe Nations, yet we may pronounce with ſome Certainty,

(1.) That the *Chaldæan* Aſtronomy could not be very valuable, ſince, as we know from *Vitruvius*, and others, they had not diſcovered that the Moon is an Opake Body. For which Reaſons, poſſibly, with ſeveral others, ſome of their Learnedeſt Champions have confeſſed, that they believed that the Ancient *Chaldæan* Obſervations, were rather Regiſters of the *Phænomena* of Heavenly Bodies, after they had appeared, than Predictions of their future Appearance. Whether their Aſtronomical Obſervations were older than their Monarchy, is uncertain: If they were not, then in *Alexander the Great*'s Time they could not challenge an Antiquity of above $\overline{D}$ or $\overline{DC}$ Years. I mention

mention *Alexander*, becauſe he is ſaid to have ſent vaſt Numbers of Obſervations from *Babylon*, to his Maſter *Ariſtotle*. The *Aſſyrian* Monarchy, of which the *Chaldæan* might not improperly be called a Branch, pretends, indeed, to great Antiquity: Mighty Things are told of *Ninus* and *Semiramis*, who is more than once mentioned by Sir *William Temple*, in theſe *Eſſays*, for her Victories, and her Skill in Gardening. But theſe Accounts are, very probably fabulous, for the following Reaſons.

Till the Time of *Tiglath-Pileſer* and *Pul*, we hear no News of any *Aſſyrian* Monarchs in the *Jewiſh* Hiſtory. In *Amraphel*'s Time, who was overthrown by *Abraham* and his Family, in the Vale of *Siddim*, the Kings of *Chaldæa* ſeem to have been no other than thoſe of *Canaan*, Captains of *Hords*, or Heads of *Clans*: And *Amraphel* was Tributary to *Chedorlaomer* King of *Elam*, whoſe Kingdom lay to the Eaſt of *Babylon*, beyond the River *Tigris*. *Chuſhan Riſhathaim*, King of *Meſopotamia*, who was overthrown ſome Ages after by *Othoniel* the *Iſraelitiſh* Judge, does not ſeem to have been a powerful Prince: It may be ſaid, indeed, that he was General to ſome *Aſſyrian* Monarch; but that is begging the Queſtion,

ſtion, ſince there is nothing which can favour ſuch an Aſſertion in the Book of *Judges*.

But when the *Aſſyrians* and *Babylonians* come once to be mentioned in the *Jewiſh* Hiſtory, they occurr in almoſt every Page of the *Old Teſtament*. There are frequent Accounts of *Pul*, *Tiglath-Pileſer*, *Shalmanezer*, *Sennacherib*, *Eſar-haddon*, *Nebuchadnezzar*, *Evil-merodach*, *Belſhazzar*; and who not? But theſe Kings lived within a narrow Compaſs of Time; the oldeſt of them but a few Ages before *Cyrus*. This would not ſuit with that prodigious Antiquity which they challenged to themſelves. The Truth is, *Herodotus*, who knew nothing of the Matter, being ſilent, *Cteſias* draws up a new Scheme of Hiſtory much more pompous; and from him, or rather, perhaps, from *Beroſus*, who was Contemporary with *Manetho*, and ſeems to have carried on the ſame Deſign for *Chaldæa*, which *Manetho* undertook for *Ægypt*, *Diodorus Siculus*, *Pompeius Trogus*, *Euſebius*, *Syncellus*, and all the Ancients that take notice of the *Aſſyrian* Hiſtory, have afterwards copied.

Cteſias knew he ſhould be ſtraitned to find Employment for ſo many Kings for $\overline{\text{MCCC}}$ Years; and ſo he ſays, they did little

little memorable after *Semiramis*'s Time. As if it were probable that a great Empire could lie ſtill for above a $\overline{M}$ Years; or that no Popular Generals ſhould wreſt the Reins out of the Hands of ſuch drowzy Maſters in all that time. No Hiſtory but this can give an Inſtance of a Family that laſted for above a $\overline{M}$ Years, without any Interruption: And of all its Kings, not one is ſaid to Reign leſs than $\overline{XIX}$, but ſome $\overline{LV}$ Years. The Healthieſt Race that ever was heard of; of whom, in $\overline{MCCC}$ Years, not one ſeems to have died an untimely Death. If any Thing can be ſhewed like this in any other Hiſtory, Sacred or Profane, it will be eaſie to believe whatſoever is aſſerted upon this Subject.

If therefore the *Chaldæan* Learning was no older than their Monarchy, it was of no great ſtanding, if compared with the *Ægyptian*. The Account of *Nebuchadnezzar*'s Dream, in the $\overline{II}^{d.}$ Chapter of *Daniel*, ſhews the *Chaldæan* Magic to have been downright Knavery; ſince *Nebuchadnezzar* might reaſonably expect that thoſe ſhould tell him what his Dream was, who pretended to interpret it when it was told them; both equally requiring a Super-natural Aſſiſtance: Yet there lay their chiefeſt Strength; or, at leaſt, they

ſaid

ſaid ſo: Their other Learning is all loſt. However, one can hardly believe that it was ever very great, that conſiders how little there remains of real Value, that was learn'd from the *Chaldæans*. The Hiſtory of Learning is not ſo lamely conveyed to us, but ſo much would, in all probability, have eſcaped the general Ship-wreck, as that, by what was ſaved, we might have been able to gueſs at what was loſt.

(2.) That if the *Learning* of theſe *Ancient Chaldæans* came as near *that of the Arabs* as their *Countries* did; one may give as good a Judgment of the Extent of the *Arabian* Learning, as of the *Chaldæan*. Sir *William Temple* rightly obſerves, that Countries little expoſed to Invaſions, preſerve Knowledge better than others that are perpetually harraſſed by a Foreign Enemy; and by conſequence, whatſoever Learning the *Arabs* had, they kept; unleſs we ſhould ſuppoſe that they loſt it through Careleſneſs. We never read of any Conqueſts that pierced into the Heart of *Arabia the Happy*, *Mahomet*'s Countrey, before the Beginning of the *Saracen* Empire. It is very ſtrange therefore, if, in its Paſſage through this noble Countrey, inhabited by a ſprightly, ingenious People, Learning, like Quick-ſilver, ſhould run

run through, and leave so few of its Influences behind it. It is certain that the *Arabs* were not a learned People when they over-spread *Asia*: So that when afterwards they translated the *Græcian* Learning into their own Language, they had but little of their own, which was not taken from those Fountains. Their *Astronomy* and *Astrology* was taken from *Ptolemee*, their *Philosophy* from *Aristotle*, their *Medics* from *Galen*; and so on. *Aristotle* and *Euclid* were first translated into *Latin*, from *Arabic* Copies; and those Barbarous Translations were the only Elements upon which the *Western School-men* and *Mathematicians* built. If they learn'd any thing considerable elsewhere, it might be *Chymistry* and *Alchymy* from the *Ægyptians*; unless we should say that they translated *Synesius*, or *Zosimus*, or some other *Græcian Chymists*.

Hence it follows, that the *Arabs* borrowed the greatest part, at least, of their Knowledge from the *Greeks*, though they had much greater Advantages of Communicating with the more Eastern Parts of the World, than either *Greeks* or *Romans* ever had. They could have acquainted us with all that was rare and valuable amongst those Ancient Sages. The *Saracen* Empire

Empire was under one Head in *Almanzor*'s Time, and was then almoſt as far extended Eaſtward as ever afterwards. His Subjects had a free Paſſage, from the *Tagus* to the *Ganges*; and being united by the common Bond of the ſame Religion, the *Brachmans*, ſome of whom did, in all probability, embrace the *Mahometan* Faith, would not be ſhy of revealing what they knew, to their *Arabian* Maſters. By this means, the Learning of the *Ægyptians*, *Chaldæans*, *Indians*, *Greeks* and *Arabs*, ran in one common Channel. For ſeveral Ages, Learning was ſo much in faſhion amongſt them, and they took ſuch care to bring it all into their own Language, that ſome of the learnedeſt *Jews*, *Maimonides* in particular, wrote in *Arabic*, as much as in their own Tongue. We might reaſonably therefore have expected to have found greater Treaſures in the Writings of theſe learned *Mahometans*, than ever were diſcovered before: And yet thoſe that have been converſant with their Books, ſay, that there is little to be found amongſt them, which any body might not have underſtood as well as they, if he had carefully ſtudied the Writings of their *Græcian* Maſters. There have been ſo many Thouſands of *Arabic* and *Perſic* MSS. brought over into *Eu-*

rope, that our learned Men can make as good, nay, perhaps, a better Judgment of the Extent of their Learning, than can be made, at this distance, of the *Greek*. There are vast Quantities of their Astronomical Observations in the *Bodleian* Library, and yet Mr. *Greaves* and Dr. *Edward Bernard*, two very able Judges, have given the World no Account of any Thing out of them, which those *Arabian* Astronomers did not, or might not have learn'd from *Ptolemee's Almagest*, if we set aside their Observations which their *Græcian* Masters taught them to make; which, to give them their due, Dr. *Bernard* commends, as much more valuable than is commonly believed, in a Letter to Dr. *Huntingdon*, printed in the *Philosophical Transactions*, containing their Observations of the Latitudes of Twenty of the most eminent of the Fixed Stars. We owe, indeed, to them alone the Way of Counting by Ten Cyphers, ascending beyond Ten in a Decuple Proportion; which is of unspeakable Use in *Astronomical* and *Algebraical* Calculations, and indeed, in all Parts of *Arithmetic*. The Use of *Chymistry* in *Physic*, together with some of the most considerable Chymical Preparations, which have led the Way to most of the late Discoveries that have been

been made in that Art, and in *Natural Philoſophy* by its means, have been unanimouſly aſcribed to the *Arabs* by thoſe Phyſicians that have ſtudied their Books (*i*). Though, in ſtrictneſs, the whole *Arabian* Learning, with all their Inventions, what, and how great ſoever they were, may be reckoned as Modern, according to Sir *William Temple*'s Computation. But I have in this whole Diſpute confined my ſelf to *Moderns*, in the ſtricteſt ſence of the word, and have only argued from what has been done by the learned Men of theſe two laſt Ages, after the *Greeks* brought their Learning along with them into *Italy*, upon the Taking of *Conſtantinople* by the *Turks*. So that the *Arabs* are Ancients here; and what has been ſaid already, evidently proves that the Old *Arabian* Learning could never be any one of thoſe Fountains from whence the *Græcian* might have been drawn, and conſequently can never be urged as ſuch by thoſe who give an Account of the Hiſtory of Learning.

(*i*) Vid. *Morhofii* Epiſt. ad *Langelottum*.

CHAP. XII.

Of the Learning of the Ancient Indians *and* Chineſes.

WE are now arrived in our Paſſage Eaſtward as far as the *Indies*, where the firſt Springs of that Learning which afterwards flow'd always Weſtward, aroſe. Thither *Pythagoras* is ſaid to have gone, and to have fetch'd from thence his celebrated Doctrine of the *Tranſmigration of Souls*, which he taught, and is now believed by the Modern *Bramines* as it was the Opinion of the *Brachmans* of old.

We have very little if any Account of theſe *Indian* Philoſophers before *Alexander the Great*, who extended his Conqueſts as far as the River *Indus*. His Hiſtorians acquaint us with a Set of Philoſophers in that Countrey, who practiſed great Auſterities themſelves, and taught others that Wiſdom lay in living upon a little, in Abſtaining from almoſt all ſorts of Natural Pleaſures, and Promoting the Proſperity and Welfare of the reſt of Mankind. The Deſcription that *Strabo* gives us of them, out of *Megaſthenes*, *Oneſi-*

Oneſicritus and *Ariſtobulus*, which is very well Abridged by Sir *W. T.* is the Fulleſt and moſt Authentic that we have. And that the Body of it may be True, is probable from the Accounts of their Succeſſors the *Bramines*, which are given us by Monſieur *Bernier*, and *Abraham Roger*, who lived many Years among them, and made it their Buſineſs to collect their Opinions with all the Exactneſs they could.

The ſuperſtitious Care which theſe People take to follow the Cuſtoms, and propagate the Opinions of their Anceſtors, be they never ſo abſurd and ſenſeleſs, plainly ſhews that they would have preſerved their Learning with equal Care, had there been any of it to preſerve. They keep a Collection of the wiſe Sayings of one *Barthrouherri*, which Monſieur *Roger* has given us a Taſt of, but ſuch miſerable Stuff for the generality, that one cannot read them without ſmiling at the Simplicity of thoſe that can admire them. They wou'd not ſhew Monſieur *Roger* their Book of the Law, which they pretend to be ſent from God; but by the Account which his *Bramine* Doctor gave of it, it is only an abſurd Hiſtory of the fabulous Succeſſions of their Deities, and as abſurd a Collection of ſuperſtitious Cere-

monies, by which they were to be worſhipped. Their Doctrine of the *Tranſmigration of Souls*, which *Pythagoras* firſt taught in the Weſt, is a precarious idle Notion, which theſe beſotted *Indians* do ſo blindly believe, that they are afraid of killing a Flea or a Louſe, for fear of diſturbing the Soul of one of their Anceſtors. Though at the ſame time they ſcruple not to force Multitudes of poor ſilly Women, and ſometimes too, full ſore againſt their Wills, to burn themſelves alive with their deceaſed Husbands Bodies, under a Pretence of their being ſerviceable to them in another World, though they are far from having any Aſſurance that their Husbands will there ſtand in need of them. Can we believe that there is a generous Spirit reſiding in a People, who have now for $\overline{MM}$ or $\overline{MMM}$ Years placed the higheſt degrees of Sanctity and Prudence in half-ſtarving themſelves, and depriving themſelves of the lawful Conveniencies of Life? Yet theſe were the chiefeſt Employments of the Ancient *Brachmans*, as they are ſtill of the Modern *Bramines*.

So that there is Reaſon to fear that the Stories of the extraordinary Wiſdom of the Ancient *Brachmans* are in a great meaſure fabulous, becauſe in the idle and bigotted

bigotted part of the Narrative they do ſo particularly agree with the Modern *Bramines*; and alſo, becauſe if one conſults what the Ancients have recorded of the *Brachman*'s in *Alexander*'s time, which is all gathered into a Body by Sir *Edward Byſhe* (*k*), he will find that the Accounts which come the neareſt to the Fountain, have leſs in them of the Romance, (*l*) and that their Hiſtorians have expatiated and flouriſh'd more, as they were at the greater diſtance. For, upon comparing what all thoſe Authors there quoted have ſaid, I am enclinable to believe, that all we know of the Ancient *Brachmans*, is due to the Accounts which *Alexander*'s Companions have given us.

(*k*) *Palladius de Gentibus Indiæ & Bragmanibus*, Edit. *Biſſæi*, *Lond.* 1665.

(*l*) Let but any Man compare *Strabo* and *Palladius* together, and he will ſee the difference, though 'tis plain they relate to the ſame Time.

But let us enter into Particulars. Sir *W. T.* tells us, out of *Strabo*, (*m*) "That their "Opinions in Natural Philoſophy, were, "that the *World* was *Round*; that it had "a Beginning, and wou'd have an End, "but reckoned both by immenſe Periods "of Time; that the Author of it was a "Spirit, or a Mind that pervaded the "whole Univerſe, and was diffuſed through "all the Parts of it; and that they held "the Tranſmigration of Souls, and ſome

(*m*) Lib. 15.

" uſed Diſcourſes of Infernal Manſions,
(n) *Eſſay*, pag. 17. " in many things like thoſe of *Plato*." (n) Whether *Megaſthenes*, from whom *Strabo* takes all this Account, has not made it a little more beautiful than he ought, I very much queſtion, ſince Monſieur *Ber-*
(o) *Voyages*, Tom. 3. pag. 168. Edit. Eng. *nier* ſays, (o) That the *Bramines* believe,
" That the *Earth* is *Flat*, and *Triangular*,
" with ſeveral Stories, all differing in
" Beauty, Perfection and Inhabitants, each
" of which is encompaſſed, they ſay, by
" its Sea; that one of theſe Seas is of
" Milk, another of Sugar, the third of
" Butter, the fourth of Wine, and ſo forth:
" ſo that after one Earth there comes a
" Sea, and after a Sea an Earth, and ſo
" on to ſeven, beginning from
(p) An Imaginary Mountain, which they place in the midſt of the Earth. " *Someire* (p), which is in
" the midſt of theſe Stories:
" That the firſt Story, which
(q) The Semi-Gods of the *Bramines*. " is at the foot of *Someire*,
" hath *Deuta's* (q) for its In-
" habitants which are very
" Perfect; that the ſecond contains
" likewiſe *Deuta's*, but leſs perfect; and
" ſo of the reſt, ſtill leſſening the Per-
" fection to the ſeventh, which, they ſay,
" is ours, that is, of Men far leſs Per-
" fect than all the *Deuta's*: And, laſtly,
" That this whole Maſs is ſuſtained
" upon the Heads of divers Elephants,
" which

" which when they ſtir, cauſe an Earth-
" quake." Upon all this, and abundance more of the like nature in *Aſtronomy*, *Anatomy*, *Medicine*, and *Phyſic's*, which ſeems to be the true Oriental Doctrine, conſonant to thoſe noble Diſcoveries which are in (*r*) Monſieur *Roger's* *Hiſtory of the Lives and Manners of the Bramines*, Monſieur *Bernier* makes this Remark; (*s*) " All theſe ſtrange Impertinencies, " which I have had the patience to relate, " have often made me think, that if *they* " be thoſe famous Sciences of the An-
" cient *Brachmans* of the *Indies*, very " many have been deceived in the great " Opinion they entertained of them. " For my part, I can hardly believe it, " but that I find the Religion of the *In-*
" *dians* to be from immemorial Times; " that 'tis written in the *Hanſcrit* Lan-
" guage, which cannot but be very an-
" cient, ſince its Beginning is unknown, " and 'tis a *dead* Language, not under-
" ſtood but by the Learned; that *all* " their Books are only written in that " Tongue: all which are as many Marks " of a very great Antiquity." This, by the way, confutes the Opinion of thoſe (*t*) who make the *Indian* Learning to be all Traditionary; for not only their Religious, but their Profane Knowledge too,

(*r*) *Hiſtoire de la Vie & des Moeurs des Bramines.*

(*s*) Pag. 169.

(*t*) Sir *W. T.* his *Eſſay*, p. 17.

too, is all written in this *Hanſcrit* Dialect.

Yet one Notion of theſe *Bramines* I cannot but take notice of, becauſe it is a very Philoſophical one, and has been with probability ſtarted and defended by ſome of the moſt curious Anatomiſts of the preſent Age, who built their Hypotheſis upon the lateſt Diſcoveries which have been made in that admirable Art: I ſhall ſet it down in Monſieur *Bernier*'s words; (*u*) "The Seeds of Plants and "Animals are not formed anew, but were "contrived in the firſt Production of the "World, and diſpenſed abroad every "where, and mixed in all things; and that "they are not only potentially but actually the very and entire Plants, and Animals, though ſo ſmall, that their Parts "cannot be diſtinguiſht, but when put "into a convenient Womb, and there "nouriſht, they extend themſelves and "encreaſe: So that the Seeds of an Apple "and Pear-Tree, are a little, entire, and "perfect Apple and Pear-Tree, having all "its Eſſential Parts; And ſo the Seeds "of an Horſe, an Elephant, a Man, *&c.* "are a little Horſe, a little Elephant, a little Man, in which there wants nothing "but the Soul and Nouriſhment to make "them appear what they are."

(*u*) Pag. 175, 176.

This

This Opinion seems rather to have been maintained by a *Leeuwenhoeck*, or a *Malpighius*, than by an *Indian*, who, as Monsieur *Bernier* assures us, (*w*) *understands nothing at all of Anatomy, and can speak nothing upon that Subject but what is impertinent.* Had it been the Result of Thought and Meditation, founded upon proper Premises, which must be the Effects of many and repeated Observations, one *might* justly have looked for, and *would* infallibly have found many other Notions of equal Subtilty among these *Bramines*; which though erroneous, (and so, perhaps, may this be,) yet could not have been made by any but Skilful Men. Such Discoveries likewise would have obliged us to have entertained a very honourable Notion of the Learning of the Ancient *Brachmans*; because, though they *might* have been Modern, in comparison of those Ancient Times, yet they *might not* also, for ought we knew, and consequently might have been challenged to those Ancient Philosophers by their Modern Champions. But when, amidst a vast variety of wild and phantastical Opinions, a Man meets with one or two which stand alone by themselves, without any thing that appears to have raised or confirmed them, he ought not presently to conclude, that the

(*w*) Pag. 166.

the Philoſophers who maintain them are Wiſe and Learned Men, though once, perhaps, or twice, *Quod nequit Ingenium, Caſus fecit.*

By this time, I am afraid I ſhall be thought as Tedious as an *Iriſh Tale-teller*, fit only to lull my Reader aſleep: But there is but one Stage more left; and though it is a great Way off, yet it may be eaſily reached upon Paper, and then will be as eaſily diſpatched. For *China*, we are told, is a charming Countrey, and therefore moſt proper to be thought upon at the End of a tedious Diſcourſe.

Sir *William Temple* knows very well, that the whole *Chineſe* Hiſtory depends upon the ſole Authority of *Martinius*, and thoſe Miſſionaries who publiſhed *Confucius* lately at *Paris*. *Martinius* (*x*) tells his Reader, that he was obliged to learn Sixty Thouſand independent Characters before he could read the *Chineſe* Authors with eaſe. This is, without all doubt, an excellent Method to propagate Learning, when Eight or Ten of the beſt Years of a Man's Life muſt be ſpent in learning to Read. The moſt conſiderable Specimen of *Chineſe* Learning that we have, is in the Writings of *Confucius*; which, if F. *Couplet* and his Companions had printed under their own Names, (*y*) *thoſe Rules* and

(*x*) *Hiſt. Sinic. Præfat.*

(*y*) Pag. 178.

and Inſtructions diſcourſed of with great Compaſs of Knowledge, Excellence of Senſe, Reach of Wit, illuſtrated with Elegance of Stile, and Aptneſs of Similitudes and Examples, would ſoon have been called an incoherent Rhapſody of Moral Sayings, with which good Senſe and tolerable Experience might have furniſhed any Man, as well as *Confucius*.

If the *Chineſes* think every part of Knowledge, but their own *Confucian* Ethics, ignoble and mechanical, why are the *Europæan* Miſſionaries ſo much reſpected for their Skill in Medicine and Mathematics? So much Knowledge in Mathematics as will but juſt ſerve an Almanack-maker, will do their Buſineſs. F. *Verbieſt* ſays, in a Letter printed ſome Years ſince in the *Philoſophical Tranſactions*, That the Honours which were paid him in the Emperor's Court, were in a great meaſure owing to his Teaching the Emperor to find the Time of the Night by the Fixed Stars, and an Aſtrolabe: This ſhews that the *Chineſes* were but meanly skilled in theſe Things; and it is probable, that thoſe who are ignorant of ſuch ordinary Matters, ſeldom carry their Speculations to a much greater Height.

Martinius and *Trigautius*, who lived long in *China*, were able fully to inform the

the World of the Extent of the *Chineſe* Knowledge; and the Pains which *Martinius* has taken to write the Hiſtory, and to ſtate the Geography of that mighty Empire, is a ſufficient Indication of his great Willingneſs to advance its Reputation in *Europe*. The *Chineſes* are certainly a ſagacious and induſtrious People, and their Skill in many Mechanical Arts ſhew them to be ſo; ſo that if they had ever applied themſelves to Learning in good earneſt, and that for near ſo long a Time, as their Hiſtory pretends to, there is no Queſtion but we ſhould have heard much more of their Progreſs. And therefore, whatſoever can be ſaid of *Chineſe* Knowledge, can never be of any weight, as long as ſmall Skill in *Phyſic* and *Mathematics* ſhall be enough to protect the *Europæan* Miſſionaries in a Court where they themſelves are eſteemed the greateſt Scholars, and honoured accordingly.

But the *Chineſe Phyſic* is wonderfully commended by Dr. *Voſſius* and Sir *William Temple* (z): *The Phyſicians excel in the Knowledge of the Pulſe, and of all ſimple Medicines, and go little further:* Neither need they; *for in the firſt, they are ſo skilful, that they pretend not only to tell by it, how many Hours or Days a ſick Man may laſt; but how many Tears a Man*

(z) Pag. 179, 180.

in

in **perfect seeming** *Health may live, in case of no Accident or Violence; and by Simples, they pretend to relieve all Diseases that Nature will allow to be cured.* What this boasted Skill is, may be seen in the little Tracts of the *Chinese Physic*, published by *Andrew Cleyer* (*a*); but because few will, in all probability, have patience to go through with them, since they are not very pleasant to read, I shall give a short Specimen of them, by which one may judge of the rest.

(*a*) *Specimen Medicinæ Sinicæ.* Francof. 1682. Quarto.

The most Ancient *Chinese* Discourse of *Physic*, entituled, *Nuy Kim* (*b*), gives this Account of the Production of our Bodies, and of the Relation of the several Parts, with the Five Elements:

(*b*) Ibid. Pag. 85, 86, 87.

'Out of the Eastern Region arises the 'Wind, out of the Wind Wood, or Plants, 'out of Wood Acidity, from thence the 'Liver, from the Liver the Nerves, from 'them the Heart: The Liver is gene-'rated the Third in Order, and perfected 'the Eighth: The Spirits of the Liver, 'as they relate to the Heaven (the Air) 'are Wind; as Wood in the Earth, as the 'Nerves in our Bodies, so is the Liver in 'the Limbs: Its Colour is Blue, and its 'Use and Action is to move the Nerves: 'The Eyes are the Windows of the Liver; 'its Tast is acid, its Passion or Affection is 'Anger:

'Anger: Anger hurts the Liver, but Sorrow and Compassion conquer Anger, 'because Sorrow is the Passion of the 'Lungs, and the Lungs are Enemies to 'the Liver: Wind hurts the Nerves, but 'Drought, the Quality of the Lungs, conquers Wind: Acidity hurts the Nerves, 'but Acrimony, or that sharp Tast which 'is proper to the Lungs, conquers Acidity, 'or Metal Conquers Wood.

'Out of the Southern Region arises 'Heat, out of Heat Fire, out of Fire Bitterness: From it the Heart is generated, 'thence the Blood; out of Blood comes 'the Spleen, or Earth out of Fire; the 'Heart governs the Tongue; that which 'is Heat in Heaven, Fire upon Earth, 'Pulsation in the Body, is the Heart in 'the Members: Its Colour is Red, has 'the Sound of Laughing; its Vicissitudes 'are Joy and Sorrow; the Tongue is its 'Window, its Tast Bitterness, its Passion 'Joy; too much Joy hurts the Heart; 'but Fear, the Passion of the Reins, which 'are Enemies to the Heart, conquers Joy: 'Heat hurts the Spirits, but Cold conquers Heat: Bitterness hurts the Spirits, 'but Saltness of the Reins conquers Bitterness, or Water quenches Fire. The Heart 'is generated the Second in Order, and is 'perfected the Seventh.

'Out

'Out of the Middle Region ariſeth 'Moiſture; out of that Earth; out of 'Earth Sweetneſs; from Sweetneſs com- 'eth the Spleen, Fleſh from that, and the 'Lungs from Fleſh: The Spleen governs 'the Mouth; that which is Moiſture in 'the Heaven, is Earth in Earth, Fleſh in 'the Body, and the Spleen in the Mem- 'bers: Its Colour is Yellow; it has the 'Sound of Singing; its Window is the 'Mouth, its Taſt is ſweet, its Paſſion is 'much Thoughtfulneſs: Thoughtfulneſs 'hurts the Spleen, but Anger conquers 'Thoughtfulneſs: Moiſture hurts Fleſh, 'but Wind conquers Moiſture: Sweetneſs 'hurts Fleſh, but Acidity conquers Sweet- 'neſs: In a word, Wood conquers Earth, 'or the Liver the Spleen. The Spleen is 'generated the Fifth in Order, and is per- 'fected the Tenth.

'Out of the Weſtern Region ariſes 'Drought: Thence come Metals, from 'them comes Sharpneſs, out of that are 'the Lungs, out of the Lungs comes Skin 'and Hair, out of Skin and Hair come 'the Reins; the Lungs govern the No- 'ſtrils: That which is Drought in the 'Heaven (or Air) is Metal in the Earth, 'Hair and Skin in the Body, and Lungs 'in the Members: Its Colour is Whitiſh, 'has the Sound of Weeping; its Win-

'dows are the Noſtrils, its Taſt is ſharp, 'its Paſſion is Sorrow: Sorrow hurts the 'Lungs, but Joy conquers Sorrow: Heat 'hurts the Skin and Hair, but the Cold 'of the Reins conquers Heat: Sharpneſs 'hurts the Skin and Hair, but Bitterneſs 'conquers Sharpneſs. The Lungs are ge-'nerated the Fourth in Order, and are 'perfected the Ninth.

'Out of the Northern Region ariſes 'Cold, out of Cold comes Water, thence 'Saltneſs, thence the Reins, thence the 'Marrow of the Bones, thence the Liver. 'The Reins govern the Ears; that which 'is Cold in the Air, Water in the Earth, 'Bones in the Body, is Reins in the Mem-'bers: Its Colour is Blackiſh, has the 'Sound of Sobbing; its Windows are the 'Ears, its Taſt is Saltneſs, its Paſſion is Fear: 'Fear hurts the Reins, but Thoughtful-'neſs conquers Fear: Cold hurts the Blood, 'but Drought conquers Cold: Saltneſs 'hurts the Blood, but Sweetneſs con-'quers Saltneſs. The Reins are genera-'ted the Firſt in Order, and perfected the 'Sixth.

(c) *Riſum forte plus movebit Europæo, quam plauſum.* ibid. pag. 87.

The Miſſionary who ſent this Account to *Cleyer* a Phyſician at *Batavia*, was afraid (c) that it would be thought ridiculous by *Europæans*; which Fear of his ſeems to have been well grounded. Another

ther who lived long in *China*, wrote also an Account of the *Chinese* Notions of the Nature and Difference of Pulses, which he (*d*) professes that he would not undertake to prove by *European* Principles. One may judge of their Worth by the following Specimen (*e*):

(*d*) *Haud quaquam suscipiam principia ista principiis nostratibus probanda.* ibid. pag. 2.

(*e*) Ibid. pag. 3, 4.

'The *Chinese* divide the Body into 'Three Regions: The First is from the 'Head to the Diaphragm: The Second 'from thence to the Navel, containing 'Stomach, Spleen, Liver and Gall, and 'the Third to the Feet, containing the 'Bladder, Ureters, Reins and Guts. To 'these Three Regions, they assign Three 'sorts of Pulses in each Hand. The up-'permost Pulse is governed by the ra-'dical Heat, and is therefore in its own 'Nature overflowing and great. The 'lowermost is governed by the Radical 'Moisture, which lies deeper than the 'rest, and is like a Root to the rest of 'the Branches: The middlemost lies be-'tween them both, partakes equally of 'Radical Heat and Moisture, and answers 'to the middle Region of the Body, as 'the uppermost and lowermost do to 'the other two. By these Three sorts of 'Pulses, they pretend to examine all sorts 'of Acute Diseases, and these also are 'examined Three several Ways: Diseases

'in the Left-Side are ſhewn by the Pul-
'ſes of the Left-Hand, and Diſeaſes in
'the Right-Side by the Pulſes of the
'Right.

It would be tedious to dwell any longer upon ſuch Notions as theſe, which every Page in *Cleyer*'s Book is full of: The Anatomical Figures annexed to the Tracts, which alſo were ſent out of *China*, are ſo very whimſical, that a Man would almoſt believe the whole to be a Banter, if theſe Theories were not agreeable to the occaſional Hints that may be found in the Travels of the Miſſionaries. This, however, does no Prejudice to their Simple Medicines, which may, perhaps, be very admirable, and which a long Experience may have taught the *Chineſes* to apply with great ſucceſs; and it is poſſible that they may ſometimes give not unhappy Gueſſes in ordinary Caſes, by feeling their Patients Pulſes: Still this is little to Phyſic, as an Art; and however, the *Chineſes* may be allowed to be excellent Empiricks, as many of the *Weſt-Indian* Salvages are, yet it cannot be believed that they can be tolerable Philoſophers; which, in an Enquiry into the Learning of any Nation, is the firſt Queſtion that is to be conſidered.

Thus

Thus I have taken a ſhort View of the Learning of the Eaſt. Sir *W. T.* is not the only Man who has aſſerted great things concerning it. Other Men, to ſtrengthen their particular Hypotheſes, have exalted it as much as he: Of all theſe, few have taken greater Pains than Dr. *Burnet* (*f*), who having given us a new Theory of the Creation and the Deluge, was obliged to examine into the Traditions of the oldeſt Nations, eſpecially thoſe which pretended moſt to ancient Monuments of their own Extraction, and the Origination of Mankind. If his Enquiries have not proved what he particularly deſigned they ſhould, which was, the atteſting to the Truth of his own Hypotheſes; yet they have proved an almoſt univerſal Tradition of the World's being once made out of a Chaos, with many other Points, which do exceedingly ſtrengthen our Belief of the *Moſaical* Hiſtory. He ingenuouſly owns, that when once the Buſineſs came to downright Reaſoning, to raiſing Principles, and drawing Concluſions from thoſe Principles, the *Greeks* went very much beyond their Teachers; and he does as good as confeſs, that all the *Barbaric Philoſophy* was either *Traditionary* or *Superſtitious*. His Authority is of great Moment here, be-

(*f*) *Archæolog. Philoſoph.*

cauſe his Deſign led him to make an Accurate Enquiry into theſe Things; which Deſign he has very carefully executed.

Now, if the Philoſophy of the Eaſtern Nations was all *Traditionary*, 'tis plain their other Learning could not be profound. For great Skill in *Geometry*, *Aſtronomy*, *Natural Hiſtory*, the *Experimental part of Phyſic's*, or *Medicine*, will naturally lead Men into Enquiries into the Cauſes of the *Phænomena* which daily occurr. Thoſe Enquiries will neceſſarily produce Principles and Hypotheſes; which Principles and Hypotheſes, though for want of ſufficient Light, they may be precarious and groundleſs, yea, ſometimes, poſſibly, abſurd and phantaſtical, yet will evidently ſhew, that the Philoſophers who deviſed them, were Men of Search and Reaſoning, of Knowledge and Experience.

The ſeveral Hypotheſes of Ancient and Modern Philoſophers, ſince Hypotheſes have firſt been introduced to account for the *Phænomena* of *Nature*, do plainly prove this Matter. The *Ariſtotelians*, who ſolve all by a Mixture of the Four Elements, go upon Obſervations and Experiments, ſuch as they are. The *Ancient Chymiſts*, who found Salt, Sulphur and Mercury in all Mix'd Bodies, prove (as they think) their

their Hypotheſis by Matter of Fact. So the more Modern ones; ſome of whom, compound every thing out of Acids and *Alkali's*; others join with the Corpuſcularians, who ſolve all by the various Motions of Minute Bodies. Still all theſe Sects pretend Obſervation and Experience: and the ſucceſſive Alteration of their Hypotheſes, ſhews that their Stock of Knowledge did proportionably encreaſe. Wherefore, ſince this has been the Conſtant, and is the Natural Method, we ought to conclude, that if the *Barbaric Philoſophy* had been built upon ſuch Foundations, it would have produced like Effects.

Whereas *Tradition*, the Fountain of all their Knowledge, is only the Effect of Memory: And as it ſhews, that there is no Inquiſitive Genius (the Mother of all Knowledge) in the People who content themſelves with it, ſo all Acquieſcence in it is utterly inconſiſtent with great Progreſſes in Natural Learning, of any ſort, unleſs, perhaps, we ſhould except Abſtracted Mathematics; which too, whether they need be excepted, may be juſtly queſtioned.

If, indeed, the Traditions of the Eaſt had comprehended a Syſtem of Natural Knowledge, had given an Account of the leading *Phænomena* of the Univerſe, had,

in ſhort, been any thing elſe but bare Memorials, and thoſe ſhort, imperfect and obſcure, of what the World once was, and what it ſhould hereafter be, they would be much more valuable for the preſent Purpoſe, than any Concluſions made by the exacteſt Reaſoning poſſible. They would then, as they ought, be eſteemed as Revelations made by Him that made the World, and conſequently, could beſt tell in what Manner, and for what Ends and Purpoſes he has created, and does preſerve this Planetary Syſtem in which we live. But ſince this is not pretended to, and if it were, could not be made good, I cannot poſſibly ſee how thoſe who allow the *Greeks* to have been the chief Advancers of *Science* as oppoſed to *Tradition* amongſt the Ancients, can deny that Natural Learning, in every Particular, was carried to a greater height by them, than by any of the Oriental Nations.

It is therefore now high time to leave thoſe Countries, in ſome of which there ſeems never to have been any ſolid Learning originally, and in the reſt but the Beginnings of it, to come to *Greece*, as it ſtood in the Age of *Ariſtotle*, *Theophraſtus*, *Euclid*, and thoſe other Great Men, who, about the Time of *Alexander the Great*, and

and afterwards, made ſuch mighty Progreſſes in almoſt all Parts of real Learning. If, upon Enquiry, it ſhall be found, that a Compariſon may be made between theſe Ancients and the Moderns, upon any Heads wherein Learning is principally concerned, which will not be to the Diſadvantage of the latter, then there needs not any thing to be ſaid further. Whether it can or no, is now to be enquired.

CHAP. XIII.

Of Ancient and Modern Logic and Metaphyſics.

SInce all that has been ſaid in the Second and Third Chapters, concerning the *Ethics*, *Politics*, *Eloquence* and *Poeſie* of the Ancient *Græcians*, belongs to them in their moſt flouriſhing Ages, a great Part of the Subject Matter of this Enquiry has already been diſpatched. The remaining Parts of their Knowledge may be reduced to theſe Four Heads: *Logic*, *Metaphyſics*, *Mathematics* and *Phyſiology*. *Logic* is the *Art of Reaſoning*; but by it Men commonly underſtand the Art of Diſputing,

Diſputing, and making Syllogiſms; of Anſwering an Adverſary's Objections dexterouſly, and making ſuch others as cannot eaſily be evaded: In ſhort, of making a plauſible Defence, or ſtarting probable Objections, for or againſt any Thing. As this is taught in the Schools, it is certainly owing to the Ancients: *Ariſtotle*'s *Organum* is the great Text by which Modern *Logicians* have framed their Syſtems; and nothing, perhaps, can be deviſed more ſubtile in that captious Art (*g*), than the *Sophiſms* of the Ancient *Stoics*. But as *Logic* is truly the Art of Reaſoning juſtly, ſo as not only to be able to explain our own Notions, and prove our own Aſſertions, clearly and diſtinctly, but to carry our Speculations further than other Men have carried theirs, upon the ſame Arguments; it has not only been much cultivated by Modern Philoſophers, but as far purſued as ever it was by the Ancients: For hereby have the late Enquiries been made into *Phyſical*, *Metaphyſical* and *Mathematical* Matters, the Extent whereof is hereafter to be examined. Hereby the Ancient *Mathematicians* made their Diſcoveries, and when they had done, they concealed their Art; for, though we have many noble Propoſitions of theirs, yet we have few Hints how they found

(*g*) Vid. *A. Gellii Noct. Attic.* lib. 1. cap. 2.

found them out; since the Knowledge of the fore-going Books in *Euclid*'s *Elements* is necessary to explain the Subsequent, but is of little or no use to help us to find out any Propositions in the subsequent Books, (which are not immediate Corollaries from what went before) in case those Books had been lost. Whether the Moderns have been deficient in this noble Part of *Logic*, may be seen by those who will compare *Des Cartes*'s *Discourse of Method*, Mr. *Lock*'s *Essay of Humane Understanding*, and *Tschirnhaus*'s *Medicina Mentis*, , with what we have of the Ancients concerning the *Art of Thinking*. Such a Comparison would not be to the Disadvantage of those Modern Authors; for, though it may be pretended, that their Thoughts and Discoveries are not entirely new in themselves, yet to us, at least, they are so, since they are not immediately owing to ancient Assistances, but to their own Strength of Thinking, and Force of Genius. And since this Art is, indeed, the Foundation of all Knowledge, I ought to take notice, that my Lord *Bacon* and *Des Cartes* were the two Great Men, who both found fault with the *Logic* of the Schools, as insufficient of it self for the great Design of *Logic*, which is the Advancement of real Learning; and

got

got Authority enough to perſuade the World, in a very great degree, that other Methods muſt be taken, beſides making Syllogiſms, and ranking the Sorts of Things under Predicaments and Predicables, by thoſe who would go much farther than their Predeceſſors went before them. The true Uſe of the common *Logic*, being rather to explain what we know already, and to detect the Fallacies of our Adverſaries, than to find that out, of which we before were ignorant. So that the Moderns have enlarged its Bottom; and by adding that *Deſideratum* which the Ancients either did not perfectly know, or, which is worſe, did invidiouſly conceal, namely, *the Method of Diſcovering Unknown Truths*, as Monſieur *Tſchirnhaus* calls it, have, if not made it perfect, yet put it into ſuch a Poſture, as that future Induſtry may very happily compleat it.

Metaphyſics is properly that Science which teaches us thoſe Things that are out of the Sphere of Matter and Motion, and is converſant about God, and Spirits, and Incorporeal Subſtances. Of theſe Things *Plato* and his Diſciples wrote a great deal: They plainly ſaw, that ſomething beyond Matter was requiſite to create and preſerve the Auguſt Frame of the

the World. If we abſtract from Revelation, the *Carteſians* diſcourſe more intelligibly concerning them, than any of the Ancients. So that tho' very many of their particular Notions, as alſo of F. *Mallebranche*'s, *M. Poyret*'s, and other Modern *Metaphyſicians*, are juſtly liable to Exception, yet the main Foundations upon which they reaſon, are, for the moſt part, real; and ſo, by conſequence, the Superſtructures are not entirely fantaſtical: And therefore they afford a vaſt Number of Hints to thoſe who love to apply their Thoughts that way, which are uſeful to enlarge Men's Underſtandings, and to guide their Manners. This, which is ſtrictly true of the Modern *Metaphyſics*, is as much as can be ſaid of the Ancient: And becauſe a Compariſon cannot be made without reading their ſeveral Writings, the ſureſt way to try the Truth of this Propoſition, will be to read *Plato* and his Commentators; and along with them, *Des Cartes*'s *Meditations*, *Velthuyſius de Initiis primæ Philoſophiæ*, *Mallebranche*'s *Recherche de la Verité*, *Poyret*'s *Cogitationes de Deo*, and Mr. *Lock*'s *Eſſay of Humane Underſtanding*, already mentioned. This may be done, without undervaluing what the Ancients wrote upon theſe noble Subjects: And the Queſtion

is

is not, *Whether they were Great Men?* But, *Whether the Moderns have ſaid any thing upon theſe Matters, without Copying out of other Men's Writings?* Which, unleſs we will do them Wrong, we are bound to ſay they have.

CHAP. XIV.

Of Ancient and Modern Geometry and Arithmetic.

IN the Method which I ſet to my ſelf in theſe *Reflections*, I choſe to begin with an Enquiry into thoſe Sciences whoſe Extent is more liable to be conteſted, and ſo onwards, to thoſe in which the Controverſie may more eaſily be determined. Monſieur *Perrault*, who has not finiſhed his *Parallel*, that I know of, took it for granted, that if the Prize were allowed to the Moderns in *Eloquence*, in *Poeſie*, in *Architecture*, in *Painting*, and in *Statuary*, the Cauſe would be given up in every thing elſe; and he, as the declared Advocate for the Moderns, might go on triumphantly with all the reſt. Wherein, poſſibly, he was not, in the main, much miſtaken.

ſtaken. How he intends to manage the remaining Part of his *Parallel*, I know not. I ſhall begin with *Abſtracted Mathematics*; both becauſe all its Propoſitions are of Eternal Truth, and beſides, are the Genuine Foundations upon which all real *Phyſiology* muſt be built.

The Method which I ſhall follow is this: (1.) I ſhall enquire into the State of Ancient and Modern *Mathematics*, without any particular Application of the Properties of the ſeveral Lines and Numbers, Surfaces and Solids, to Phyſical Things. (2.) I ſhall enquire what New Inſtruments have been invented, or Old ones improved, by which the Knowledge of Nature of any ſort has been, or may be, further enlarged. (3.) I ſhall enquire whether any Improvements have been actually made of *Natural Hiſtory*, and of any *Phyſico-Mathematical* or *Phyſical Sciences*, ſuch as *Aſtronomy*, *Muſic*, *Optics*, *Medics*, and the like. (4.) From all this, I ſhall endeavour to paſs a Judgment upon the Ancient and Modern Ways of *Philoſophizing* concerning Nature in general, and its principal *Phænomena*, or *Appearances*.

I begin with *Geometry* and *Arithmetic*, becauſe they are general Inſtruments whereby we come to the Knowledge of many of the abſtruſeſt Things in Nature; ſince,

ſince, as *Plato* ſaid of old, *God always Geometrizes in all his Works.* That this Compariſon might be the more exact, I deſired my Learned and Worthy Friend, Mr. *John Craig*, to give me his Thoughts upon this Matter: His own learned Writings upon the moſt difficult Parts of *Geometry*, for ſuch are the *Quadratures of Curve Lines*, will be ſufficient Vouchers for his Skill in theſe Things. I ſhall ſet down what he ſays, in his own Words:

'If we take a ſhort View of the *Geometry* of the Ancients, it appears, that they conſidered no *Lines*, except *Streight Lines*, the *Circle*, and the *Conic Sections*: As for the *Spiral*, the *Quadratrix*, the the *Conchoid*, the *Ciſſoid*, and a few others, they made little or no Account of them. It is true, they have given us many excellent and uſeful Theorems concerning the Properties of theſe others, but far ſhort of what has been diſcovered ſince. Thus, to inſtance in the *Quadrature* of the *Circle*, which did ſo much excerciſe and perplex the Thoughts of the Ancients; How imperfect is that of *Archimedes*, in compariſon of that exhibited by *Van Ceulen*? And every body knows how this is exceeded by the later Performances of Mr. *Newton*, and Monſieur *Leibnitz*. *Archimedes*, with a great deal

'deal of Labour, has given us the exact 'Quadrature of the *Parabola*; but the Re- 'ctification of the *Parabolic Line*, depen- 'ding on the *Quadrature* of the *Hyperbola*, 'is the Invention of this laſt Age. The 'rare Properties of the *Conic Sections*, in 'the *Reflexion* and *Refraction* of *Light*, are 'the undoubted Diſcoveries of theſe later 'Times. It were eaſie to give more In- 'ſtances of this nature, but theſe are ſuf- 'ficient to ſhew how far the Modern Ma- 'thematicians have out-done the Ancients, 'in diſcovering the nobleſt and uſefulleſt 'Theorems, even of thoſe few Figures 'which they chiefly conſidered.

'But all this is nothing, in compariſon 'of that boundleſs Extent which the Mo- 'dern Mathematicians have carried Geo- 'metry on to: Which conſiſts in their 'receiving into it all the *Curve Lines* in 'Nature, together with the *Area's* and '*Solids* that reſult from them; by diſtin- 'guiſhing them into certain *Kinds* and '*Orders*; by giving general Methods of 'deſcribing them, of determining their '*Tangents*, their *Lengths*, their *Area's*, and 'the *Solids* made by the Rotation of them 'about their Axes. Add to all this, the 'general Methods that have been invented 'of late for finding the Properties of a 'great Number of theſe *Curves*, for the

'Advancement of *Optics*, *Mechanics*, and 'other Parts of *Philoſophy*: And let any 'Man of Senſe give the Preference to the 'Ancient Geometry if he can.

'That the Ancients had general Methods of Conſtructing all plain Problems 'by a ſtreight Line and a Circle, as alſo all 'Solid Problems by the help of a Conic 'Section, is moſt certain. But it is as 'certain that here they ſtopped, and could 'go no further, becauſe they would not 'receive any Order of Curves beyond the 'Conic Sections, upon ſome nice Scrupuloſity in multiplying the Number of the '*Poſtulata*, requiſite to the deſcribing of 'them: Whereas the Modern Geometers, 'particularly the Renowned *Des Cartes*, 'have given general Rules for Conſtructing all Problems of the V^th. or VI^th. Degree. Which Method, if rightly underſtood, is applicable to all Problems of 'any Superior Order.

'How deficient the Geometry of the 'Ancients was in that Part which related 'to the *Loca Geometrica*, is manifeſt from 'the Account that *Pappus* gives us of that 'Queſtion, about which *Euclid* and *Apollonius* made ſo many ineffectual Attempts: 'The Solution whereof we owe entirely 'to Mr. *Iſaac Newton* (*h*). For it is evi- (*h*) *Philoſ.* P. 74, 75. 'dent, that *Des Cartes* miſtook the true

'Intent

'Intent of the Ancients in this Matter. 'So that the *Loca Solida* is now one of 'the perfecteſt Parts of Geometry that 'we have, which before was one of the 'moſt confuſed and defective.

'From comparing the Ancient and 'Modern Geometry, I proceed to the 'Compariſon of thoſe Arts to which we 'owe the Improvements both of the one 'and the other. Theſe are chiefly Two, '*Algebra*, and the *Method of Indiviſibles*. 'As to the latter of theſe, I ſhall not ſtand 'to enquire whether *Cavallerius* was the 'firſt Inventor, or only the Reſtorer of it. 'I know Dr. *Wallis* (*i*) is of Opinion, that 'it is nothing but the Ancients *Method of* '*Exhauſtions*, a little diſguiſed. It is e-'nough for your Purpoſe, that by the 'help of *Cavallerius*'s Method, Geometry 'has been more promoted in this laſt Age, 'than it was in all the Ages before. It 'not only affords us neat and ſhort De-'monſtrations, but ſhews us how to find 'out the abſtruſeſt Theorems in Geometry. 'So that there has hardly been any con-'ſiderable Improvement of late, which 'does not owe its Riſe to it; as any Man 'may ſee, that conſiders the Works of '*Cartes*, *Fermat*, *Van Heuraet*, *Huygens*, '*Neil*, *Wallis*, *Barrow*, *Mercator*, *Leibnitz*, 'and *Newton*. *Archimedes*'s Propoſitions

(*i*) *Hiſt. of Algebra*, p. 285.

'of the Properties of a Sphere, and a Cy-
'linder, are ſome of the eaſieſt Examples
'of this Method. How vaſtly more cu-
'rious and more uſeful Theorems have
'been ſince added to Geometry, is
'known to every one that is converſant
'in the afore-mentioned Authors; eſpe-
'cially Mr. *Newton*, *Leibnitz*, and *Huygens*:
'To inſtance in Particulars, were to
'tranſcribe their whole Books and Trea-
'tiſes.

'Let us, in the next place, compare
'the *Ancient* and *Modern Algebra*. That
'the Ancients had ſome kind of *Algebra*
'like unto ours, is the Opinion of ſeveral
'learned Writers of late: And it is evi-
'dent from the Seven remaining Books of
'*Diophantus*, that it was brought to a con-
'ſiderable Length in his Time. But how
'infinitely ſhort this was of that *Algebra*
'which we now have, ſince *Vieta*'s Time,
'will appear to any one that conſiders
'the different Proceſs of both. For, tho'
'*Diophantus* has given us the Solution of
'a great many hard and knotty Arithme-
'tical Problems, yet the laſt Step of his
'Reſolution ſerves only for one particular
'Example of each Problem: So that for
'every new Example of the ſame Que-
'ſtion, there muſt be a new Proceſs made
'of the whole *Analyſis*. Whereas, by our

'Modern

'Modern *Algebra*, the *Analyſis* of any 'one Caſe gives a general Canon for all 'the infinite Caſes of each Problem; 'whereby we diſcover many curious 'Theorems about the Properties of Num-'bers, not to be attained by *Diophantus*'s 'Method; this being the peculiar Ad-'vantage of *Specious Algebra*, firſt intro-'duced by *Vieta*, and wonderfully pro-'moted by ſeveral worthy Mathemati-'cians ſince. Beſide this intolerable Im-'perfection of the Ancient *Algebra*, uſed 'by *Diophantus*, which required as many 'different Operations as the Problem had 'different Examples, that is, infinite: all 'which are included in one general Solu-'tion by the Modern *Algebra*; there is 'this great Defect in it, that in *Undeter-'mined Queſtions*, which are capable of 'innumerable Solutions, *Diophantus*'s *Al-'gebra* can ſeldom find any more than 'one; whereas, by the Modern *Algebra*, 'we can find innumerable, ſometimes all 'in one Analyſis; tho' in many Problems 'we are obliged to re-iterate the Opera-'tion for every new Anſwer. This is 'ſufficient to let you ſee, that (even in 'the Literal Sence) our *Algebra* does infi-'nitely exceed that of the Ancients. Nor 'does the Excellency of our *Algebra* ap-'pear leſs in the great Improvements of

'Geometry. The reducing all Problems to 'Analytical Terms, has given Rise to those 'many excellent Methods whereby we 'have advanced Geometry infinitely be-'yond the Limits assigned to it by the An-'cients. To this we owe, (1.) The Expres-'sing all Curves by Equations, whereby we 'have a View of their Order, proceeding 'gradually on *in infinitum*. (2.) The 'Method of Constructing all Problems 'of any Assignable Dimension; whereas 'the Ancients never exceeded the Third. 'Nay, from the Account which *Pappus* 'gives us of the afore-mentioned Que-'stion, it is evident, that the Ancients 'could go no further than Cubic Equa-'tions: For he says expressly, they knew 'not what to make of the continual Mul-'tiplication of any Number of Lines more 'than Three; they had no Notion of it. '(3.) The Method of Measuring the '*Area's* of many Infinities of Curvilinear 'Spaces; whereas *Archimedes* laboured 'with great Difficulty, and wrote a par-'ticular Treatise of the Quadrature of 'only one (*k*), which is the simplest and 'easiest in Nature. (4.) The Method of 'Determining the Tangents of all Geome-'tric Curve Lines; whereas the Ancients 'went no further than in Determining 'the Tangents of the Circle and Conic 'Sections.

(*k*) The *Parabola*.

'Sections. (5.) The Method of Determining the Lengths of an infinite Number of Curves; whereas the Ancients could never measure the Length of one. If I should descend to Particulars, the Time would fail me. As our *Algebra*, so also our *Common Arithmetic* is prodigiously more perfect than theirs; of which, *Decimal Arithmetic* and *Logarithms* are so evident a Proof, that I need say no more about it.

'I would not be thought, however, 'to have any Design to sully the Reputation of those Great Men, *Conon*, *Archimedes*, *Euclid*, *Apollonius*, &c. who, if 'they had lived to enjoy our Assistance, 'as we now do some of theirs, would, 'questionless, have been the greatest Ornaments of this Age, as they were deservedly the greatest Glory of their own." Thus far Mr. *Craig*.

Those that have the Curiosity to see some of these Things proved at large, which Mr. *Craig* has contracted into one View, may be amply satisfied in Dr. *Wallis*'s *History of Algebra*, joined with *Gerhard Vossius*'s *Discourses De Scientiis Mathematicis*.

It must not here be forgotten, that Abstracted Mathematical Sciences were exceedingly valued by the ancientest Philo-

ſophers: None, that I know of, expreſſing a Contempt of them but *Epicurus*, though all did not ſtudy them alike. *Plato* is ſaid to have written over the Door of his Academy, *Let no Man enter here, who does not underſtand Geometry.* None of all the learned Ancients has been more extolled by other learned Ancients, than *Archimedes.* So that, if in theſe Things the Moderns have made ſo great a Progreſs, this affords a convincing Argument, that it was not want of Genius which obliged them to ſtop at, or to come behind the Ancients in any thing elſe.

CHAP. XV.

Of ſeveral Inſtruments invented by the Moderns, which have helped to advance Learning.

HAving now enquired into the State of *Mathematics*, as they relate to *Lines* and *Numbers* in *general*, I am next to go to thoſe Sciences which conſider them as they are applied to *Material Things.* But theſe being of ſeveral Sorts, and of a vaſt Extent, taking in no leſs than the whole

whole Material World, it ought to be obſerved, that they cannot be brought to any great Perfection, without Numbers of Tools, or Arts, which may be of the ſame Uſe as Tools, to make the Way plain to ſeveral Things, which otherwiſe, without their Help, would be inacceſſible.

Of theſe Tools, or Inſtruments, ſome were anciently invented, and thoſe Inventions were diligently purſued: Others are wholly new. According to their Uſes, they may be ranged under theſe Two General Heads: (1.) Thoſe which are uſeful to all Parts of Learning, though perhaps not to all alike. (2.) Thoſe which are particularly ſubſervient to a Natural Philoſopher, and a Mathematician. Under the firſt Head one may place *Printing*, *Paper of Rags*, and *Engraving*. Under the latter come *Teleſcopes*, *Microſcopes*, the *Thermometer*, the *Baroſcope*, the *Air-Pump*, *Pendulum-Clocks*, *Chymiſtry*, and *Anatomy*. All theſe, but the two laſt, were abſolutely unknown to the Ancient *Greeks* and *Romans*. *Chymiſtry* was known to the *Greeks*, and from them carried to the *Arabs*. *Anatomy* is, at leaſt, as old as *Democritus* and *Hippocrates*; and doubtleſs, among the *exact Ægyptians*, ſomething older.

The

The Benefit of *Printing* has been ſo vaſt, that every thing elſe wherein the Moderns have pretended to excell the Ancients, is almoſt entirely owing to it: And withal, its general Uſes are ſo obvious, that it would be Time loſt to enlarge upon them; but it muſt be taken notice of, becauſe Sir *William Temple* has queſtion'd (*l*) *whether* Printing *has multiplied Books, or only the Copies of them*; from whence he concludes, that we are not to ſuppoſe that the Ancients had not equal Advantages by the Writings of thoſe that were ancient to them, as we have by the Writings of thoſe that are ancient to us. But he may eaſily ſolve his own Doubt, if he does but reflect upon the Benefit to Learning which ariſes from the *multiplying Copies* of good Books: For though it ſhould be allowed, that there were anciently as many Books as there are now, which is ſcarce credible; yet ſtill the Moderns have hereby a vaſt Advantage, becauſe, (1.) Books are much cheaper, and ſo come into more Hands. (2.) They are much more eaſily read: and ſo there is no Time loſt in poring upon bad Hands, which weary the Readers, and ſpoil their Eyes. (3.) They can be printed with Indexes, and other neceſſary Diviſions, which, though they might be made in MSS. yet they would then

(*l*) Pag. 6.

then make them ſo voluminous and cumberſome, that not one in forty who now mind Books, becauſe they love Reading, would then apply themſelves to it. (4.) The Notice of new and excellent Books is more eaſily diſperſed. (5.) The Text is hereby better preſerved entire, and is not ſo liable to be corrupted by the Ignorance or Malice of Tranſcribers; this is of great Moment in Mathematics, where the Alteration of a Letter, or a Cypher, may make a Demonſtration unintelligible.

Paper made of *Linnen Rags*, may, in a larger ſence, be reckoned alſo amongſt Modern Inventions; the Improvement of which to the preſent Fineneſs and Cheapneſs, is almoſt of as great Advantage to Learning, as *Printing* it ſelf: And if we were, with the Old *Greeks* and *Romans*, obliged to Write upon *Barks of Plants*, *ſmoothed Wood*, *Wax* or *Parchment*, we ſhould ſoon think ſo; ſince Inſtruments eaſily got, even though they ſhould in ſome things be inferior to others, do, by making Men's Labours eaſie and pleaſant, exceedingly contribute to encreaſe their Induſtry, and excite their Emulation. But to ſay more upon theſe Subjects, would be to abuſe Men's Patience, ſince theſe things are ſo plain, that they need no Proof.

Engraving

Engraving upon Wood, or *Copper*, is of great Use in all those Parts of Knowledge where the Imagination must be assisted by sensible Images. For want of this noble Art, the *Ancient Books* of *Natural History*, and *Mechanical Arts*, are almost every where obscure, in many places unintelligible. *Mathematical Diagrams*, which need only a Ruler and a Pair of Compasses, have been better preserved, and could with more Ease be drawn: But in *Anatomy*, in *Mechanics*, in *Geography*, in all Parts of *Natural History*, *Engraving* is so necessary, and has been so very advantageous, that without it, many of those Arts and Sciences would to this hour have received very little Encrease. For when the Images, the Proportions, and the Distances of those Things wherein a Writer intends to instruct his Reader, are fully and minutely engraven in Prints, it not only saves abundance of Words, by which all Descriptions must of necessity be obscured, but it makes those Words which are used, full and clear; so that a skilful Reader is thereby enabled to pass an exact Judgment, and can understand his Authors without a Master, which otherwise it would be impossible to do, so as to be able to discern all, even the minutest Mistakes and Oversights in their Writings, which

which puts an end to Diſputes, and encreaſes Knowledge.

Theſe are general Inſtruments, and more or leſs ſerviceable to all ſorts of Learned Men in their ſeveral Profeſſions and Sciences: Thoſe that follow, are more particular: I ſhall begin with thoſe that aſſiſt the Eye, either to diſcern Objects that are too far off, or too ſmall.

The *Imperfections* of *Diſtance* are remedied in a great meaſure by *Teleſcopes*, whoſe chief Uſe, that comes under our Conſideration, is to diſcern the Stars, and other Celeſtial Bodies.

To find out the firſt Inventor of theſe ſorts of Glaſſes, it will be neceſſary to learn who firſt found out the Properties of Convex and Concave Glaſſes in the Refraction of Light. Dr. *Plot* has collected a great deal concerning F. *Bacon*, in his *Natural Hiſtory of Oxfordſhire*; which ſeems to put it out of doubt, that he knew that great Objects might appear little, and ſmall Objects appear great; that diſtant Objects would ſeem near, and near Objects ſeem afar off, by different Applications of Convex and Concave Glaſſes; upon the Credit of which Authorities, Mr. *Molineux* (*m*) attributes the Invention of Spectacles to this learned Friar, the Time to which their earlieſt Uſe may be traced, agreeing

(*m*) *Dioptric.* p. 256, 257, 258.

agreeing very well with the Time in which he lived; but how far F. *Bacon* went, we know not: So that we muſt go into *Holland* for the firſt Inventors of theſe excellent Inſtruments, and there they were firſt found out by one *Zacharias Joannides* (*n*), a Spectacle-maker (*o*) of *Middleburgh*, in *Zeland*; in MDXC he (*p*) preſented a Teleſcope of Two Glaſſes to Prince *Maurice*, and another to Arch-Duke *Albert*, the former of whom apprehending that they might be of great Uſe in War, deſired him to conceal his Secret. For this Reaſon, his Name was ſo little known, that neither *Des Cartes* (*q*) nor *Gerhard Voſſius* (*r*) had ever heard any thing of him, when they attributed the Invention of Teleſcopes to *Jacobus Metius* of *Alkmaer*. However, the Invention taking Air, *Galileo Galilei* purſued the Hint, and made ſeveral Teleſcopes, with which he made Obſervations upon Heavenly Bodies, that got him immortal Honour. Thereby (*s*) he diſcovered Four Planets moving conſtantly round *Jupiter*, from thence uſually called his *Satellits*, which afterwards were obſerved to have a conſtant, regular, and periodical Motion. This Motion is now ſo exactly known, that Mr. *Flamſteed*, who is one of the moſt accurate Obſervers that ever was,

(*n*) *Borel. de vero Inventore Teleſcopii*, p. 30.
(*o*) Ibid. p. 35.
(*p*) Ibid. p. 30.
(*q*) *Dioptric.*
(*r*) *De Scientiis Mathemat.* p. 70.
(*s*) Vide *Galilæi Nuntium ſidereum primò niſallor, impreſſum, A. D.* MDCVIII.

was, has been able to calculate Tables of the Eclipſes of the ſeveral Satellits, according to which, Aſtronomers in different Quarters of the World, having Notice of the preciſe Time when to look for them, have found them to anſwer to his Predictions, and publiſhed their Obſervations accordingly. This is an effectual Anſwer to all that Rhapſody which *Stubbe* (*t*) has collected in his Brutal Anſwer to Mr. *Glanvile*'s *Plus Ultra*, about the Uncertainty of all Obſervations made by Teleſcopes; ſince it is impoſſible to calculate the Duration of any Motion juſtly by fallacious and uncertain Methods. By the Eclipſes of *Jupiter*'s Satellits, Longitudes would ſoon be exactly determined, if Tubes of any Length could be managed at Sea. (*u*) But *Jupiter* is not the only Planet about which Things anciently unknown have been revealed by this noble Inſtrument. The Moon has been diſcovered to be an Earth endued with a libratory Motion, of an uneven Surface, which has ſomething analogous to Hills and Dales, Plains and Seas; and a New Geography, (if one may uſe that Word without a Blunder) with accurate Maps, has been Publiſhed by the Great *Hevelius* (*w*), and Improved by *Ricciolus* (*x*), by which Eclipſes may be obſerved much more nicely

(*t*) *Plus Ultra* reduced to a *Non plus*, p. 28, 36.

(*u*) Vid. *Philoſoph. Tranſact.* n. 177.

(*w*) *Selenograph.*

(*x*) *Almageſt.*

nicely than could be done formerly: The Sun has been found to have Spots at ſome times; the Planets to move round their Axes; *Saturn* to have a Luminous Ring round about his Body, which in ſome Poſitions appears like two Handles, as they are commonly called, or large Prominencies on oppoſite Parts of his Limb, carried along with him, beſide Five Planets moving periodically about him, as thoſe others do about *Jupiter*: The milky Way, to be a Cluſter of numberleſs Stars; the other Parts of the Heaven, to be filled with an incredible Number of Fixed Stars, of which, if *Hevelius*'s Globes are ever publiſhed, the World may hope to ſee a Catalogue. Theſe are ſome of the remarkable Diſcoveries that have been made by *Teleſcopes*: And as New Things have been revealed, ſo Old ones have been much more nicely obſerved, than formerly it was poſſible to obſerve them.

But I need not enlarge upon particular Proofs of that, which every Aſtronomical Book, printed within theſe $\overline{L}$ Years, is full of; if I ſhould, it would be ſaid, perhaps, that I had only copied from the *French* Author *of the Plurality of Worlds*, ſo often mentioned already.

As ſome Things are too far off, ſo others are too ſmall to be ſeen without help.

help. This last Defect is admirably supplied by *Microscopes*, Invented by the same *Zacharias Joannides* (*y*); which have been made useful in *Anatomical* and *Physical* Enquiries by *Malpighius*, *Leeuwenhoek*, *Grew*, *Havers*, and several others. The first considerable Essay to shew what might be discovered in Nature, by the help of *Microscopes*, was made by Dr. *Hook*, in his *Micrography*; wherein he made various Observations upon very different sorts of Bodies. One may easily imagine what Light they must needs give unto the nicer Mechanism of most kinds of Bodies, when Monsieur *Leeuwenhoek* has plainly proved, that he could, with his Glasses, discern Bodies several Millions of times less than a Grain of Sand. This Assertion of his, how incredible soever it may seem to those who are unacquainted with Physical Matters, may in all probability be believed, because Dr. *Hook*, who examined what *Leeuwenhoek* says of the little Animals which he discerned in Water, of which he tells the most wonderful Things, does, in his *Microscopium*, attest the Truth of *Leeuwenhoek*'s Observations.

(*y*) Borellus, *ubi supra*, p. 35.

Besides these that are of more universal Use, several other *Instruments* have been invented, which have been very ser-

viceable to find out the Properties of Natural Bodies; and by which ſeveral Things of very great moment, utterly unknown to the Ancients, have been detected. As,

(1.) The *Thermometer*, invented (z) by *Sanctorius*, an eminent Phyſician of *Padua*. Its immediate Uſe is, to determine the ſeveral Degrees of Heat and Cold; of which our Senſes can give us but uncertain Notices, becauſe they do not ſo much inform us of the State of the Air in it ſelf, as what its Operations are at that time upon our Bodies. But *Sanctorius* uſed only Veſſels open at each end, which are of ſmall Uſe, ſince Liquors may riſe or fall in the Tubes, as well from the Encreaſe or Diminution of the Weight of the Air, as of Heat and Cold. That Defect was remedied by Mr. *Boyle* (a), who ſealed up the Liquors in the Tubes, Hermetically, ſo that nothing but Heat and Cold could have any Operation upon them. The Uſes to which they have been applied, may be ſeen at large in Mr. *Boyle's* *Hiſtory of Cold*, and *the Experiments of the Academy* del Cimento.

(z) Borellus *de Motu Animalium*, Part II. Propoſ. clxxv.

(b) See his *Thermometrical Thoughts*, prefixed to his *Hiſtory of Cold*.

(2.) The *Baroſcope*, or *Torricellian Experiment*, ſo called from its Inventor, *Evangeliſta Torricelli*, a *Florentine* Mathematician, who, about the Year MDCXLIII. found

found that Quick-ſilver would ſtand erect in a Tube, above XXVIII Inches from the Surface of other Quick-ſilver into which the Tube was immerſed, if it was before well purged of Air. This noble Experiment ſoon convinced the World, that the Air is an actually heavy Body, and gravitates upon every Thing here below. This Gravitation being found unequal at ſeveral times, Mr. *Boyle* applied this Inſtrument to Mechanical Uſes (*b*), and ſhewed how it might teach us to know the Differences and changes of Weather; when dry, and when wet; ſince, by a vaſt Number of Obſervations, he had learn'd, that in dry Weather the Air drove up the *Mercury*, and in wet Weather let it fall again; though never lower than XXVIII Inches, and ſcare ever higher than XXXII.

(*b*) *Philoſ. Tranſact.* n. 9, 10, 11, ---55.

(3.) Theſe Obſervations, with other Collateral Experiments, induced him to believe that the Air was, in truth, a Springy Body, which expanded or contracted it ſelf in a Reciprocal Proportion, to the Encreaſe or Leſſening of the Compreſſion of the Ambient Bodies. For which he invented an Inſtrument to draw the Air out of Veſſels that were filled with it, by Suction. The firſt Eſſays of that kind ſeem to have been made ſome Years

before his appeared, by *Otto Guerick* of *Magdebourg:* but as he applied them chiefly to the Gravitation of the Air, without taking any notice of its Spring; so they were very imperfect, when compared to Mr. *Boyle*'s. By this *Air-Pump*, as it is usually called, he discovered abundance of Properties in the Air, before never suspected to be in it. What they are, either considered singly, or in their Operations upon all sorts of Bodies, may be seen at large in his *Physico-Mechanical Experiments concerning the Weight and Spring of the Air*, and in several of his other Discourses upon the same Argument, some of which are printed by themselves, and others in the (c) *Philosophical Transactions*. How far they may be relied upon, appears from this; That though *Hobbes* and *Linus* have taken a great deal of Pains to destroy Mr. *Boyle*'s Theory, yet they have had few or no Abettors: Whereas the Doctrine *of the Weight and Spring of the Air*, first made thoroughly intelligible by Mr. *Boyle*, has universally gained Assent from Philosophers of all Nations who have, for these last XXX Years, busied themselves about Natural Enquiries.

(c) *Numb.* 62, 63, 122. *Vid.* Catalogue of Mr. *Boyle*'s Works, at the end of the First Part of the *Medicinal Experiments*, printed MDCXCII. in *Twelves*.

(4.) The

(4.) The Invention of *Pendulum-Clocks* ought here to be remembred, becauſe, it being certain from Aſtronomical Principles, and Obſervations, that the Diurnal Motion of the Earth is not ſo exactly Periodical, as that a true Equation of Time can thereby be obtained: By this Inſtrument, the Meaſure of the Variation being once adjuſted, the true Time of the Earth's Diurnal Motion, can, at all Seaſons of the Year, be more exactly known. Its Uſefulneſs in making Aſtronomical Obſervations is alſo very obvious; for they could not anciently be ſo minute as they are at preſent, for want of ſuch nice Sub-Diviſions of an equable Motion as it affords. The Invention of this noble Inſtrument is attributed, by the Publiſher of the Experiments of the Academy *del Cimento*, to *Galileo Galilei*, who found out ſo many excellent Theorems of the Nature and Proportions of the Motions of Projected and Vibrating Bodies. He ſays that *Galileo* firſt applied the *Pendulum* to *Clock-work*; and that his Son *Vincenzio* put it in practice in the Year MDCXLIX (*d*). It was little taken notice of, however, in theſe Parts, till Monſieur *Huygens* revived or invented it a-new; to whom, for that Reaſon, the Glory of finding out this uſeful Inſtrument is commonly attributed.

(*d*) *Experiments of the Academy* del Cimento, p. 12. Eng. Edit.

Upon this Occaſion, I ought not to omit, that great Improvement of Watches, by adding a Second Spring to balance the Firſt, (as the *Pendulum* in a Clock does the Weights) which alſo is attributed to Monſieur *Huygens*, tho' he and Dr. *Hook* have both contended for the Honour of this uſeful Invention. It appears by the *Philoſophical Tranſactions*, and by Dr. *Hook*'s *Lectures*, that he had a right Notion of this Matter, and that he had made ſeveral Eſſays to reduce it to Practice, ſome Years before any of Monſieur *Huygens*'s Watches were produced; but that Monſieur *Huygens* firſt made *Pendulum-Watches* (ſo they are commonly call'd) that proved thoroughly ſerviceable. Theſe will not be diſputed to be Modern Inventions, ſince the whole Buſineſs of Clocks and Watches was unknown to all, even the (*e*) *Arabian* Antiquity: Their Aſtronomers meaſured their Time by Hour-Glaſſes of Water, or Vibrating Strings of ſeveral Lengths; which would, indeed, ſerve them, in moſt caſes, to meaſure Time nicely by, whilſt they were obſerving; though they were of no Uſe upon other Occaſions, and even then were liable to great Hazards.

(*e*) See Dr. *Edw. Bernard*'s Letter to Dr. *Huntingdon*, about the Latitude of Twenty Fixed Stars, from *Arabian* Obſervat. *Philoſoph. Tranſact.* n. 159.

CHAP.

CHAP. XVI.

Of Ancient and Modern Chymiſtry.

Chymiſtry, or the Art of Dividing Bodies by Fire, comes next to be conſidered. So great Things have thereby been diſcovered in Nature, that would have been utterly unknown without it, that it may juſtly be eſteemed as one of the chiefeſt Inſtruments whereby Real Knowledge has been advanced. It has been cultivated by three ſorts of Men, for very different Reaſons; by *Refiners*, *Alchymiſts*, and *Chymiſts* properly ſo called. The *Refiner*'s Art, which is older than the Flood, is, in *Holy Scripture*, aſcribed to *Tubal-Cain*, as its firſt Inventor (*f*). The early Uſe of Gold and Silver, as Inſtruments of Exchange in Trade, and of Copper and Iron for Mechanical Uſes, in the Eaſtern Parts, ſhews, that Men ſoon knew how to ſeparate Metals from their Droſs, to a great degree. And as frequent Purifications are neceſſary for that Work, ſo we find that the Neceſſity of them was long ago commonly known, ſince *David* compared a Righteous Man to Silver Seven times purified in the Fire (*g*). But though the *Ancients* knew pretty well how to Refine

(*f*) Gen. iv. 22.

(*g*) Pſal. xii. 6.

their Metals, and to Extract them from their Ore's, in common Cases, where but one sort of Metal lay in the same Lump, or where the different Metals were easily separable; yet in nicer Cases, where many different Sorts were blended in the same Mass, and where the Metal was obstinately mixed in Stones, over which the Fire could have but small Power, both which Cases do not unfrequently occurr, they were often at a loss; and besides, being wholly ignorant of the Use of *Quick-silver* in separating Metals from their Ore's, and of *Aquæ-Fortes*, and the *Cupel*, by which all manner of Metals are with Ease parted from one another, their Work was laborious, bungling, and many times imperfect. Gold, indeed, which is generally found alone, might be thoroughly purified; which Silver could not be, without great Difficulty and Loss: Whereas now, since the Property of Quick-silver's incorporating with all Metals but Copper and Iron is universally known, every Workman in the *Peruvian* Mines understands that when once his Ore is duly prepared, every Particle of the Silver will *amalgamate* (as the Chymists call it) with the Mercury, and so make a Past that gives him all his Metal without any trouble; and if it is mixed with Gold,

Aqua-

Aqua-Regis, will part them; if with Copper, *Aqua-Fortis*; if with Lead, the *Cupel*. Nor ought we to forget that uſeful Invention of turning Copper into Braſs with *Lapis Calaminaris*, by which its Weight is conſiderably augmented, its Luſtre heightned, and its Uſefulneſs for many Mechanical Purpoſes encreaſed.

It muſt be own'd, that Skill in *Foſſils*, and particularly in *Metals*, has not been cultivated by the *Moderns* proportionably with other Parts of *Natural Hiſtory*. Yet what a Difference there muſt ariſe between their Knowledge and that of the Ancients from theſe few Things alone, is evident to any Man who has the leaſt inſight into theſe Matters. The *Ancients* were ſo groſly ignorant of the commoneſt Properties of Mercury, that they only knew that it would incorporate with Gold. We know, from *Vitruvius* and *Pliny*, that this Property of Mercury was formerly obſerved; and *Pliny* (*h*) adds, *That every thing ſwims upon Mercury but Gold; that only it draws to it ſelf.* And how well they were skill'd in the Specific Weight of Metals, appears from their believing (*i*) that *Lead was heavier, and more ductile than*

(*h*) *Omnia ei* [Mercurio] *innatant præter Aurum; id unum ad ſe trahit.* Plin. *Nat. Hiſt.* l. xxxiii. c. 6.

(*i*) *Nec pondere aut facilitate materiæ prælatum eſt* [Aurum] *cæteris metallis, cum ſedat per utrumque Plumbo.* Plin. *Nat. Hiſt.* l. xxxiii. c. 3.

than Gold. The Uſe and Compoſition of *Aquæ-Fortes* is aſcribed to the *Arabs*, by the Learned in theſe Matters; (*k*) and the *Cupel* is notoriouſly known to be a Modern Invention. So that I think we may boldly compare the Modern Writers of Metals with the beſt of the Ancients, of whoſe Skill in theſe Things *Pliny* gives us a good Account, whoſe Writings may be ſet againſt what *Georgius Agricola*, *Alonſo Barba*, *Lazarus Erckern*, and our Countrey-man *Webſter*, have ſaid upon theſe Subjects; in whoſe Writings, Skill in Diſtinguiſhing, Purifying, Separating and Aſſaying Ore's and Metals, is what is chiefly to be regarded. Theſe Things depend upon Obſervation and Experience, which is certain, and conſequently will admit of compariſon, ſince it may eaſily be decided, whoſe Trials and Obſervations of any ſort have been the moſt Exact. It ſignifies nothing whoſe Hypotheſes of the Nature, Texture, Growth, and Poſſibility of the Tranſmutation of Metals, be righteſt, in the Diſpute before us. Men may eternally, and will diſpute *pro* and *con* about thoſe Things which will, in all probability, lie undetermined, till either we know the Eſſences of Things, (which, perhaps, are not to be known in this Life,) or till Mankind be furniſhed with a larger

(*k*) Borrichius *de Ortu & Progreſſu Chemiæ.*

a larger ſtock of Experiments and Obſervations than yet they are. So that though ſeveral of the Modern Writers of Metals that might be named, if Show and Oſtentation were proper, give very poor Accounts of the Phyſical Nature of Minerals, yet their Experiments and Obſervations are never a whit the leſs valuable; and others who ſeem to Philoſophize much nearer the Truth, yet are not here to be eſteemed Advancers of the Stock of Knowledge upon the ſcore of their Hypotheſes; becauſe what is ſtill conteſted, is not to be given in as Evidence, eſpecially when the Cauſe does not want it.

I have ſpoken already of *Alchymy*, or the Art of Making Gold; and ſo I ſhall paſs on to the *Chymiſt's Art*, which conſiſts in making ſuch Analyſes of Bodies by Fire, or other Agents, Chymically prepared, as may reduce them into more ſimple Subſtances than thoſe out of which they were before compounded. I make a difference between the *Chymiſt* and the *Refiner*; becauſe the Operations of the *Chymiſt* are employ'd about making uſeful Medicines, or Philoſophical Experiments; whereas the Diſquiſitions of the *Refiner* terminate altogether in finding out ways how to part his Metals from their Ore's, and from one another, and to purifie them from

from their Droſs. The Diſcoveries therefore which have been made by *Chymiſtry* properly ſo called, are ſo much later than thoſe Ages which Sir *William Temple* contends for, that thoſe who thought they had a great deal to ſay for the other Parts of *Chymiſtry*, do here give up the Controverſie. *Borrichius* himſelf owns, that *Hippocrates*, *Ariſtotle* and *Galen* knew ſo little of *Chymiſtry*, that they could not ſo much as make *Roſe-Water*. Now, though he ſays this, with a deſign to Diſparage their Skill in Phyſic, when compared with the *Ægyptian*, yet therein he deſtroys his own Hypotheſis; becauſe, in ſeveral Places of his *Vindication of the Hermetical and Chymical Philoſophy and Medicine*, againſt *Conringius*'s Book *de Medicina Hermetica*, he takes Pains to prove, that the Knowledge of theſe very Men was originally owing to the *Ægyptians*. But the Thing ſpeaks it ſelf: The Inward Uſe of Antimonial, Vitriolic and Mercurial Preparations in Phyſic, was but little known before the Time of *Baſilius Valentinus*, and *Paracelſus*: What was ancienter, was taken from the *Arabs*, who are Moderns againſt Sir *William Temple*. (*l*) They may be looked upon as the firſt Inventors of Chymical Medicine: (*l*) They firſt extracted Vinous Spirits from Fermented Liquors:

(*l*) Borrichius *de Ortu & Prog. Chem.* Morhofius *ad Langelottum.*

Not

Not to mention abundance of other Preparations, which *Arnoldus de Villa Nova*, *Raymund Lully* his Scholar, and F. *Bacon* learned from them. I will not deny but ſome Chymical Experiments were very anciently known. *Solomon* (*m*) hints at the Diſagreement of *Vinegar* and *Nitre*; which, though not intelligible of common *Nitre*, yet as Mr. *Boyle* (*n*) found by his own Experience, it is certainly true of *Ægyptian Nitre*; which, as being a natural *Alkali*, will cauſe an Ebullition, when joined with any Acid Salt.

(*m*) Prov. xxv. 20.

(*n*) Boyle's *Producibleneſs of Chymical Principles*, p. 30, 31.

Some Paſſages likewiſe are produced by *Borrichius*, to prove that the Ancients underſtood ſomething of Calcinations, and the Uſe of Lixiviate Salts: But theſe things are very few, very imperfect, and occaſional. Chymiſtry was not eſteemed as a diſtinct Art; or the Analyſes thereby produced, worthy a Philoſopher's notice; though the Induſtry of later Ages have found them to be ſo regular and remarkable, that many Perſons have thought that the Conſtituent Principles of Mixed Bodies are no other way ſo certainly to be found out. Hence have the *Hypotheſes* of the *Paracelſians* taken their Beginning, who held, that *Salt*, *Sulphur* and *Mercury* were the Active Principles of Compoſition of all Mixed Bodies.

Hence

Hence ſeveral others have been led to believe, that the Primary Conſtituents of moſt Bodies were *Acid* and *Alkalizate Salts*. Which Hypotheſes, though liable to many Exceptions, as Mr. *Boyle* (*o*) has fully proved, are founded upon ſuch a variety of ſurprizing Experiments, that thoſe who firſt ſtarted them, were not ſo unadviſed, as one that is wholly unacquainted with the Laboratories of the *Chymiſts*, might, at firſt view, ſuſpect. For it is certain, that Five diſtinct and tolerably uniform Subſtances may be drawn from moſt Vegetable and Animal Subſtances, by Fire; *Phlegm*, *Fixed Salt*, *Oil*, *Earth*, and *Spirit*, or *Volatile Salt* diſſolved in *Phlegm*. So that here is a new Field of Knowledge, of which the Ancients had no ſort of Notion.

(*o*) *Sceptical Chymiſt*, and *Produc. of Chymical Principles.*

The great and ſucceſsful Change hereby made (*p*) in the *Pharmaceutical* Part of Phyſic, ſhews that theſe Philoſophers, by Fire, have ſpent their Time to very good purpoſe. Thoſe Phyſicians who reaſon upon *Galenical* Principles, acknowledge, that in many Caſes, the *Tinctures*, *Extracts*, *Spirits*, *Volatile Salts*, and *Roſins* of Vegetables and Animals, are much more efficacious Remedies than the *Galenical* Preparations of thoſe ſelf-ſame Medicines. Nay, though they are not eaſily reconciled

(*p*) See Mr. *Boyle's Uſefulneſs of Experimental Philoſophy.*

ciled to Mineral Preparations, becauſe the Ancients not knowing how to ſeparate them from their groſſer *Fæces*, durſt ſeldom apply them to any but Chirurgical Uſes; yet they themſelves are forced to own, that ſome Diſeaſes are of ſo malignant a Nature, that they cannot be diſpelled by milder Methods. The Uſe of *Mercury* in Venereal Diſtempers, is ſo great, and ſo certain, that if there be ſuch a Thing as a Specifical Remedy in Nature, it may juſtly deſerve that Title. The Unskilfulneſs of thoſe who have prepared and adminiſtred *Antimonial* Medicines, has made them infamous with many Perſons, though many admirable Cures have been, and are wrought by them, skilfully corrected, every Day. And it is well known, that the Inward Uſe of *Steel* has been ſo ſucceſsful, that in many Diſeaſes, where the niceſt Remedies ſeem requiſite, whether the Conſtitution of the Patients, or the Nature of the Diſtempers, be conſidered, it is, without Fear, made uſe of; though its Medicinal Vertues, in theſe Caſes, have been found out by Chymical Methods.

Upon the whole Matter, it is certain, that here is a new and gainful Acquiſition made: The old *Galenical Materia Medica* is almoſt as well known, in all probability,

lity, as ever it was; since there are so great Numbers of Receipts preserved in the Writings of the old Physicians. The Industry of Modern Naturalists has, in most, at least in all material Cases, clearly discovered what those Individual Remedies are, which are there described. So that whatsoever Enlargement is made, is a clear Addition; especially, since these Minerals and Metals were then as free and common as they are now. Besides, vast Numbers of *Galenical* Medicines, Chymically prepared, are less nauseous, and equally powerful; which is so great an Advantage to Physic, that it ought not to be overlooked.

CHAP. XVII.

Of Ancient and Modern Anatomy.

Anatomy is one of the most necessary Arts to open to us Natural Knowledge, of any that was ever thought of. Its Usefulness to Physicians was very early seen; and the *Greeks* took great Pains to bring it to Perfection. Some of the first Dissectors (*q*) tried their Skill upon living Bodies of Men, as well as Brutes. This

(*q*) *Vide* Corn. Celsum *in Præfatione.*

was

was so inhumane and barbarous a Custom, that it was soon left off: And it created such an abhorrence in Men's Minds of the Art it self, that in *Galen*'s time, even dead Bodies were seldom opened; and he was often obliged (*r*) to use Apes, instead of Men, which sometimes led him into great Mistakes.

(*r*) *Anatom. Administ. passim.*

It may be said, perhaps, that because there is not an ancient System of Anatomy extant, therefore the Extent of their Knowledge in this Particular cannot be known. But the numerous Anatomical Treatises of *Galen* do abundantly supply that Defect. In his elaborate Work *of the Uses of the Parts of Humane Bodies*, he gives so full an Idea of ancient Anatomy, that if no other ancient Book of Anatomy were extant, it alone would be sufficient for this Purpose. He is very large in all his Writings of this kind, in taking Notice of the Opinions of the Anatomists that were ancienter than himself, especially when they were mistaken, and had spent much Time and Pains in Opening Bodies of Brutes, of which he somewhere promises to write a Comparative Anatomy. So that his Books not only acquaint us with his own Opinions, but also with the Reasonings and Discoveries of *Hippocrates*, *Aristotle*, *Herophilus* and

Eraſiſtratus, whoſe Names were juſtly Venerable, for their Skill in theſe Things. Beſides, he never contradicts any body, without appealing to Experience, wherein though he was now and then miſtaken, yet he does not write like a Pedant, affirming a thing to be true or falſe, upon the Credit of *Hippocrates*, or *Herophilus*, but builds his Arguments upon Nature, as far as he knew her. He had an excellent Underſtanding, and a very piercing Genius; ſo that the falſe Uſes which he frequently aſſigns to ſeveral Parts, do certainly ſhew that he did not underſtand the true Texture of thoſe Parts; becauſe where his Anatomy did not fail him, his Ratiocinations are, generally ſpeaking, exact. Wherefore, in this Particular, his Miſtakes inſtruct us as effectually in the Ancients Ignorance, as his true Notions do in their Knowledge. This will appear at large hereafter, where it will be of mighty uſe to prove, That the Ancients cannot be ſuppoſed to have known many of the moſt eminent Modern Diſcoveries; ſince if they had known them, they would not have aſſigned ſuch Uſes to thoſe Parts, as are not reconcilable to thoſe Diſcoveries. If *Galen* had known that the *Pancreas* had been a Heap of ſmall Glands, which all emit into one common Canal, a particular

cular Juice carried afterwards through that Canal into the Guts, which there meeting with the Bile, goes forward, and assists it in the making of the Chyle, he would never have said (*s*) that Nature made it for a Pillow to support the Veins, which go out of the Liver in that Place, where they divide into several Branches, lest if they had been without a Rest, they should have been hurt by the violent Eruption of the Blood; and this too, without assigning any other Use for it.

(*s*) *De Usu Partium*, lib. v. c. 2.

By *Anatomy*, there is seldom any thing understood but the Art of laying open the several Parts of the Body with a Knife, that so the Relation which they severally bear each to other may be clearly discerned. This is generally understood of the *containing* Parts, Skin, Flesh, Bones, Membranes, Veins, Arteries, Muscles, Tendons, Ligaments, Cartilages, Glands, Bowels, wherein only the Ancients busied themselves: As for the Examination of the Nature and particular Texture of the *contained* Parts, Blood, Chyle, Urine, Bile, Serum, Fat, Juices of the Pancreas, Spleen and Nerves, Lympha, Spittle, Marrow of the Bones, Mucilages of the Joints, and the like; they made very few Experiments, and those too, for want of Chymistry and Microscopes, very imper-

fect. The Diſcoveries therefore which have been made in that nobler Part, which are numerous and conſiderable, are in a manner wholly owing to later Ages. In the other, a great deal was anciently done, though a great deal more was left for Poſterity to do.

I ſhall begin with the Body in general. It is certain, that all the great Diviſions of the Bones, Muſcles, Veins and Arteries, moſt of the viſible Cartilages, Tendons and Ligaments, were exactly known in *Galen*'s time; the Poſitions of the Muſcles, their ſeveral Originations, the Inſertions of their Tendons, and inveſting Membranes, were, for the moſt part, traced with great Nicety and Truth; the more conſpicuous Pairs of Nerves which ariſe either from the Brain or Spinal Marrow, were well known, and carefully followed; moſt of the great Branches of the Veins and Arteries, almoſt all the Bones and Cartilages, with very many Muſcles, have ſtill old *Greek* Names impoſed upon them by the Old Anatomiſts, or *Latin* Names tranſlated from the *Greek* ones: So that, not only the eaſie things, and ſuch as are diſcernible at firſt ſight, were thoroughly known; but even ſeveral Particulars, eſpecially in the Anatomy of the Nerves, were diſcovered, which are not obvious without great

great Care, and a good deal of Practical Skill in Diſſecting. So much in general; from which it is evident, that as far as Anatomy is peculiarly uſeful to a Chirurgeon, to inform him how the Bones, Muſcles, Blood-Veſſels, Cartilages, Tendons, Ligaments and Membranes, lie in the Limbs, and more conſpicuous Parts of the Body, ſo far the Ancients went: And here, there is very little that the Moderns have any Right to pretend to, as their own Diſcovery; tho' any Man that underſtands theſe things, muſt own, That theſe are the firſt things which offer themſelves to an Anatomiſt's View.

Here I ſhall beg leave to deſcend to Particulars, becauſe I have not ſeen any Compariſon made between *Ancient and Modern Anatomy*, wherein I could acquieſce; whilſt ſome, as Mr. *Glanvile* (*t*), and ſome others who ſeem to have copied from him, have allowed the Ancients leſs than was their Due; others, as *Vander Linden*, and *Almeloveen* (*u*), have attributed more to them than came to their Share; eſpecially ſince (though perhaps it may be a little tedious, yet) it cannot be called a Digreſſion.

(*t*) Eſſay of Modern Improvements of Uſeful Knowledge.

(*u*) *Inventa Nov. Antiqua.*

Hippocrates (*w*) took the Brain to be a Gland. His Opinion was nearer to the Truth than any of his Succeſſors; but he ſeems

(*w*) *De Glandulis*, pag. 418. §. 7. Edit. *Vander Linden.*

ſeems to have thought it to be a ſimilar Subſtance, which it evidently is not. And therefore, when ſeveral Parts of it were diſcovered not to be glandulous, his Opinion was rejected. *Plato* took it to be Marrow, ſuch as nouriſhes the Bones; but its Weight and Texture ſoon deſtroyed his Notion, ſince it ſinks in Water wherein Marrow ſwims; and is hardened by Fire, by which the other is melted. *Galen* (*x*) ſaw a little farther, and he aſſerts it to be of a Nervous Subſtance, only ſomething ſofter than the Nerves in the Body. Still they believed that the Brain was an Uniform Subſtance, and as long as they did ſo, they were not like to go very far. The firſt Anatomiſt who diſcovered the true Texture of the Brain, was *Archangelus Picolhomineus* (*y*) an *Italian*, who lived in the laſt Age. He found that the Brain properly ſo called, and *Cerebellum*, conſiſt of Two diſtinct Subſtances, an outer Aſh-coloured Subſtance, through which the Blood-Veſſels, which lie under the *Pia Mater* in innumerable Folds and Windings, are diſſeminated; and an inner every where united to it, of a Nervous Nature, that joins this *Bark* (as it is uſually call'd) to the *Medulla Oblongata*, which is the Original of all the Pairs of Nerves that iſſue from the Brain, and

(*x*) *De Uſu Partium*, lib. viii. cap. 6.

(*y*) Malpighius *Epiſt. de Cerebro ad Fracaſſatum*, p. 2.

and of the Spinal Marrow, and lies under the Brain and *Cerebellum*. After him, Dr. *Willis* (z) was so very exact, that he traced this Medullar Substance through all its Insertions into the Cortical, and the *Medulla Oblongata*, and examined the Rises of all the Nerves, and went along with them into every Part of the Body with wonderful Curiosity. Hereby not only the Brain was demonstrably proved to be the Fountain of Sense and Motion, but also by the Courses of the Nerves, the Manner how every Part of the Body conspires with any others to procure any one particular Motion, was clearly shewn; and thereby it was made plain, even to Sence, that where-ever many Parts joined at once to cause the same Motion, that Motion is caused by Nerves that go into every one of those Parts, which are all struck together. And tho' *Vieussens* and *du Verney* have in many things corrected Dr. *Willis's Anatomy of the Nerves*; yet they have strengthened his general Hypothesis, even at the time when they discovered his Mistakes, which is the same thing to our present purpose. *Galen* (a) indeed, had a right Notion of this Matter, but he traced only the larger Pairs of Nerves, such as could not escape a good Anatomist.

(z) *Anat. Cerebri.*

(a) *De U. P.* l. 8. c. 4.

But the Manner of the Forming of the *Animal Spirit* in the Brain, was wholly unknown. In order to the Diſcovery whereof, *Malpighius* (*b*), by his Microſcopes, found that the Cortical Part of the Brain conſiſts of an innumerable Company of very ſmall Glandules, which are all ſupplied with Blood by Capillary Arteries; and that the Animal Spirit, which is ſeparated from the Maſs of the Blood in theſe Glandules, is carried from them into the *Medulla Oblongata* thorough little Pipes, whereof one belongs to every Gland, whoſe other End is inſerted into the *Medulla Oblongata*, and that theſe Numberleſs Pipes, which in the Brain of ſome Fiſhes look like the Teeth of a ſmall Ivory Comb (*c*), are properly that which all Anatomiſts after *Picolhomineus* have called the *Corpus Calloſum*, or the Medullar Part of the Brain. This Diſcovery deſtroys the Ancient Notions of the Uſes of the Ventricles of the Brain, and makes it very probable, that thoſe Cavities are only Sinks to carry off excrementitious Humours, and not Store-Houſes of the Animal Spirit: It ſhews likewiſe how little they knew of the Brain, who Believed that it was an uniform Subſtance. Some of the Ancients diſputed (*d*) whether the Brain were not made

(*b*) *De Cerebri Cortice.*

(*c*) *De Cerebro*, pag. 4.

(*d*) Galen *de U. P.* l. viii. c. 2.

made to cool the Heart. Now, though theſe are ridiculed by *Galen*, ſo that their Opinions are not imputable to thoſe who never held them; yet they ſhew, that theſe famous Men had examined theſe things very ſuperficially: For no Man makes himſelf ridiculous if he can help it; and now, ſince Mankind are ſatisfied, by Ocular Demonſtration, that the Brain is the Original of the Nerves, and the Principle of Senſe and Motion, he would be thought out of his Wits, that ſhould doubt of this Primary Uſe of the Brain; though formerly, when things had not been ſo experimentally proved, Men might talk in the dark, and aſſign ſuch Reaſons as they could think of, without the Suſpicion of being ignorant or impertinent.

The *Eye* is ſo very remarkable a Member, and has ſo many Parts peculiar to it ſelf, that the Ancients took great Notice of it. They found its Humours, the Watry, Cryſtalline, and Glaſſy, and all its Tunicles, and gave a good Deſcription of them; but the Optic Nerve, the Aqueous Ducts which ſupply the Watry Humour, and the Veſſels which carry Tears were not ſufficiently examined. The firſt was done by Dr. *Briggs* (*e*), who has found, that in the *Tunica Retiformis*, which is contiguous to the Glaſſy Humour, the

(*e*) Theory of Viſion. *Grew's* Tranſact. *numb.* 6. and Philoſ. Tranſact. *numb.* 147.

the Filaments of the Optic Nerve there expanded, lie in a moſt exact and regular Order, all parallel one to another; which when they are united afterwards in the Nerve, are not ſhuffled confuſedly together, but ſtill preſerve the ſame Order till they come to the Brain. The Cryſtalline Humour had already been diſcovered to be of a Double-Convex Figure, made of Two unequal Segments of Spheres, and not perfectly Spherical, as the Ancients thought. So that this further Diſcovery made by Dr. *Briggs*, ſhews evidently why all the Parts of the Image are ſo diſtinctly carried to the Brain, ſince every Ray ſtrikes upon a ſeveral Filament of the Optic Nerve; and all thoſe Strings ſo ſtruck, are moved equably at the ſame time. For want of knowing the Nature and Laws of Refraction, which have been exactly ſtated by Modern Mathematicians, the Ancients diſcourſed very lamely of Viſion. This made *Galen* think that the Cryſtalline Humour (*f*) was the Seat of Viſion, whereas its only Uſe is, to refract the Rays; as the common Experiment of a dark Room, with one only Hole to let in Light, plainly proves: For if one puts a Convex Glaſs within it, ſo as to ſuffer no light to be let in but thorough that Glaſs, a moſt exact Land-skip

(*f*) *De Uſu Partium*, lib. viii. cap. 6.

of

of every thing without, in their proper Colours, Heights and Diſtances, will be repreſented upon a Paper placed in the Focus of the Glaſs: And it is well known, that the ſame thing will appear, if the Cryſtalline Humour taken out of an Oxe's or a Man's Eye, be placed in the Hole, inſtead of the Glaſs. The Way how the Watry Humour of the Eye, when by Accident loſt, may be and is conſtantly ſupplied, was firſt found out and deſcribed by Monſieur *Nuck* (*g*), who diſcovered a particular Canal of Water ariſing from the internal Carotidal Artery, which creeping along the Sclerotic Coat of the Eye, perforates the Cornea near the Pupil, and then branching it ſelf curiouſly about the Iris, enters into and ſupplies the Watry Humour. As to the Veſſels which moiſten the Eye, that it may move freely in its Orbit, the Ancients knew in general, that there were Two Glands in the Corners of the Eyes (*h*); but the Lympheducts, through which the Moiſture is conveyed from thoſe Glands, were not fully traced till *Steno* (*i*) and *Briggs* (*k*) deſcribed them; ſo that there is juſt the ſame difference between our Knowledge and the Ancients in this Particular, as there is between *his* Knowledge who is ſure there is ſome Road or other

(*g*) *De Ductibus novis Aquoſis.*

(*h*) Galen *de U. P.* lib. x. c. 11.

(*i*) *Obſervat. Anatomicæ de Oris Oculorum & Narium Vaſis.*

(*k*) *Ophthalmographia.*

other from this Place to that, and *his* who knows the whole Courſe, and all the Turnings of the Road, and can deſcribe it on a Map.

The Inſtruments by which Sounds are conveyed from the *Drum* to the *Auditory Nerves* in the inner Cavities of the *Ear*, were very little, if at all, known to the Ancients. In the Firſt Cavity there are Four ſmall Bones, the *Hammer*, the *Anvil*, the *Stirrup*, and a ſmall flattiſh Bone juſt in the Articulation of the *Anvil* and the *Stirrup*. It is now certainly known, that when the Drum is ſtruck upon by the external Air, theſe little Bones, which are as big in an Infant as in adult Perſons, move each other; the Drum moves the Hammer, That the Anvil, That the Stirrup, which opens the Oval Entrance into the Second Cavity: None of theſe Bones were ever mentioned by the Ancients, who only talked of Windings and Turnings within the *Os Petroſum*, that were covered by the large Membrane of the Drum. *Jacobus Carpus*, one of the firſt Reſtorers of Anatomy in the laſt Age, found out the *Hammer* and the *Anvil*; *Realdus Columbus* diſcovered the *Stirrup*; and *Franciſcus Silvius*, the little flattiſh Bone, by him called *Os Orbiculare*, but miſtook its Poſition: He thought it

it had been placed Sideways of the Head of the *Stirrup*, whereas Monſieur *du Verney* (*l*) found that it lies in the *Head* of the *Stirrup*, between that and the *Anvil*. The other inner Cavities were not better underſtood, the Spiral Bones of the *Cochlea*, that are divided into Two diſtinct Cavities, like Two pair of Winding-Stairs parallel to one another, which turn round the ſame Axis, with the Three Semicircular *Canals* of the *Labyrinthus*, into which the inner Air enters, and ſtrikes upon the ſmall Twigs of the Auditory Nerves inſerted into thoſe ſmall Bones, were things that they knew ſo little of, that they had no Names for them; and indeed, till Monſieur *du Verney* came, thoſe Mazes were but negligently, at leaſt unſucceſsfully, examined by Moderns, as well as Ancients; it being impoſſible ſo much as to form an Idea of what any former Anatomiſts aſſerted of the wonderful Mechaniſm of thoſe little Bones, before he wrote, if we ſet aſide Monſieur *Perrault*'s (*m*) *Anatomy* of thoſe Parts, which came out a Year or two before, who is not near ſo exact as Monſieur *du Verney*.

(*l*) *Traité de l'Organe de l'Ouye.* Paris, 1683.

(*m*) *Eſſays de Phyſique.* Part II.

The other Parts of the Head and Neck, wherein the *Old Anatomy* was the moſt defective,

defective, were the *Tongue*, as to its Internal Texture; and the *Glands of the Mouth, Jaws* and *Throat*. The Texture of the *Tongue* was but guessed at, which occasioned great Disputes concerning the Nature of its Substance, (*n*) some thinking it to be Glandulous, some Muscular, and some of a peculiar Nature, not to be matched in any other Part of the Body. This therefore *Malpighius* examined with his Glasses, and discovered, that it was cloathed with a double Membrane; that in the inner Membrane there are abundance of small *Papillæ*, which have extremities of Nerves inserted into them, by which the Tongue discerns Tasts, and that under that Membrane it is of a Muscular Nature, consisting of numberless Heaps of Fibres, which run all manner of ways, over one another, like a Mat.

(*n*) *Vide* Malpighium *de Linguâ.*

The general Uses of the *Glands of the Mouth, Jaws* and *Neck*, were anciently known; it was visible that the Mouth was moistened by them, and the Mass of the Spittle supplied from them; and then, having named them from the Places near which they lie, as the *Palate*, the *Jaws*, the *Tongue*, the *Ears*, the *Neck*, they went no further; and there was little, if any thing, more done, till Dr. *Whar-*

Dr. *Wharton* and *Nicolaus Steno* examined these Glands. And upon an exact Enquiry, Four several Salival Ducts have been discovered, which from several Glands discharge the Spittle into the Mouth. The first was described by Dr. *Wharton* (*o*), near Forty Years ago; it comes from the *Conglomerate Glands* that lie close to the inner side of the lower Jaw, and discharges it self near the middle of the Chin into the Mouth. The Second was found out by *Steno* (*p*), who published his Observations in MDCLXII; this comes from those Glands that lie near the Ears, in the inside of the Cheek, and the outside of the Upper Jaw. The Third was found out by (*q*) *Thomas Bartholin*, who gave an Account of it in MDCLXXXII, and about the same time by one *Rivinus* a *German*: It arises from the Glands under the Tongue, and going in a distinct Canal to the Mouth of *Wharton*'s Duct, there, for the most part, by a common Orifice, opens into the Mouth. The Fourth was discovered by Monsieur *Nuck* (*r*); he found a Gland within the Orbit of the Eye, from which, not far from the Mouth of *Steno*'s Duct, Spittle is supplied to the Mouth by a peculiar Canal. Besides these, the same Monsieur *Nuck* found some smaller Glands near

(*o*) *Adenograph.* c. 21.

(*p*) *Observat. Anat. de Oris Vasis.*

(*q*) Nuck *Sialograph.*

(*r*) Ibid.

near the laſt, but lower down, which, by Four diſtinct Pipes, carry ſome Spittle into the Mouth; ſo careful has Nature been to provide ſo many Paſſages for that neceſſary and noble Juice, that if ſome ſhould fail, others might ſupply their Want.

CHAP. XVIII.

Of the Circulation of the Blood.

FRom the *Head*, we are to look into the *Thorax*, and there to conſider the *Heart* and the *Lungs*. The *Lungs*, as moſt of the other *Viſcera*, were believed to be of a *Parenchymous* Subſtance, till *Malpighius* found by his Glaſſes (*s*) that they conſiſt of innumerable ſmall Bladders, that open into each other, as far as the outermoſt; which are covered by the outer Membrane, that incloſes the whole Body of the *Lungs*: And that the ſmall Branches of the *Wind-Pipe* are all inſerted into theſe Bladders; about every one of which the *Veins* and *Arteries* are entwined, in an unconceivable Number of Nets and Mazes; that ſo the inſpired Air may

(*s*) *Epiſt. de Pulmonibus.*

may preſs upon, or mix with, the Maſs of Blood, in ſuch ſmall Parcels as the Ancients had no Notion of. The *Wind-Pipe* alſo it ſelf is nouriſhed by an *Artery* that creeps up the Back-ſide, and accompanies it in all its Branchings: Which was firſt found out by *Frederic Ruyſch*, a *Dutch* Profeſſor of *Anatomy* at *Leyden*, about Thirty Years ago.

But the great Diſcovery that has been made of the *Lungs*, is, That the whole Maſs of Blood is carried out of the Right Ventricle of the Heart, by the *Arteria Pulmonaris*, called anciently *Vena Arterioſa*, thorough all the ſmall Bladders of the *Lungs*, into the *Vena Pulmonaris*, (or *Arteria Venoſa*;) and from thence, into the Left Ventricle of the Heart again. So that the Heart is a ſtrong Pump, which throws the Blood, let in from the Veins, into the Lungs; and from the Lungs, afterwards, into the Arteries; and this by a conſtant rapid Motion, whereby the Blood is driven round ſeveral times in an Hour. This Diſcovery, firſt made perfectly intelligible by Dr. *Harvey*, is of ſo very great Importance to ſhew the Communication of all the Humours of the Body, each with other, that as ſoon as Men were perfectly ſatisfied that it was not to be conteſted, which they were in a few Years, a great many put in

for the Prize, unwilling that Dr. *Harvey* ſhould go away with all the Glory. *Vander Linden*, who publiſhed a moſt exact Edition of *Hippocrates*, in *Holland*, about XXX Years ago, has taken a great deal of Pains to prove that *Hippocrates* knew the *Circulation of the Blood*, and that Dr. *Harvey* only revived it. The Subſtance of what has been ſaid in this Matter, is this; That *Hippocrates* ſpeaks (*t*) in one place, *of the Uſual and Conſtant Motion of the Blood*: That, in another place, he calls (*u*) the *Veins and Arteries, the Fountains of Humane Nature, the Rivers that water the whole Body, and convey Life; and which, if they be dried up, the Man dies*: That, in a third place, he ſays, (*w*) *That the Blood-Veſſels, which are diſperſed over the whole Body, give Spirit, Moiſture and Motion, and all ſpring from one; which one* (Blood-Veſſel) *has no Beginning, nor no End, that I can find; for where there is a Circle, there is no Beginning.* Theſe are the cleareſt Paſſages that are produced, to prove, that *Hippocrates* knew the *Circulation*

(*t*) Παρεμφερόμενον ἐν τῇ νόσῳ διὰ παντὸς, ἅτε τοῦ αἵματος ἐφαρμένης τε καὶ ἐκκεκινημένης τῆς εἰωθυίης κίνησιν. De Morbi, lib. 1. §. 30. Edit. Vand.

(*u*) Αὗται πηγαὶ φύσιος ἀνθρώπου, καὶ οἱ ποταμοὶ ἐνταῦθα ἀνὰ τὸ σῶμα, τοῖσιν ἄρδει τὸ σκῆνος· ἔστι δ' καὶ ζώην φέρουσι τῷ ἀνθρώπῳ· κὴν αὐανθέωσιν ἀπέθανεν ὁ ἄνθρωπος. De Corde, §. 5.

(*w*) Αἱ φλέβες διὰ τοῦ σώματος κεχύμθαι, πνεῦμα, καὶ ῥεῦμα καὶ κίνησιν παρέχουσι· ἀπὸ μιῆς πολλαὶ διαβλασάνεσαι· καὶ αὕτη μὲν ἡ μία, ὅθεν ἤρξε· καὶ ἧι τετελεύτηκεν, οὐκ οἶδα, κύκλου γὰρ γεγομένου, ἀρχὴ οὐκ εὑρέθη. De Venis, §. 17.

lation

lation of the Blood; and it it plain from them, that he did believe it as an *Hypotheſis*; that is, in plain *Engliſh*, that he did ſuppoſe the Blood to be carried round the Body by *a conſtant accuſtomed Motion*: But that he did not know what this *conſtant accuſtomed Motion* was, and that he had not found that Courſe which, in our Age, Dr. *Harvey* firſt clearly demonſtrated, will appear evident from the following Conſiderations. (1.) He ſays nothing of the *Circulation of the Blood*, in his Diſcourſe *of the Heart*, where he Anatomizes it as well as he could, and ſpeaks of the (*x*) Ventricles, and the Valves (*y*), which are the immediate Inſtruments by which the Work is done. (2.) He believes that the Auricles of the Heart (*z*) are like Bellows, which receive the Air to cool the Heart. Now, there are other Uſes of them certainly diſcovered, ſince they aſſiſt the Heart in the Receiving of the Blood from the *Vena Cava*, and the *Vena Pulmonaris*. This, no Man that knows how the Blood circulates, can be unacquainted with; and accordingly, would have been mentioned by *Hippocrates*, had he underſtood it. (3.) *Hippocrates* (*a*) ſpeaks of Veins, as receiving Blood *from* the

(*x*) *De Corde*, § 4.
(*y*) Ibid. § 7, 8.
(*z*) Ibid. § 6.

(*a*) *Arteriæ quidem purum ſanguinem & ſpiritum* à corde *recipiunt*; *Venæ autem & ipſæ* à corde *ſanguinem* *jumunt, per quas corpori diſtribuitur.* De Structura Hominis, § 2.

Heart, and going *from* it: Which alſo was the conſtant way of Speaking of *Galen*, and all the Ancients. Now, no Man that can expreſs himſelf properly, will ever ſay, That any Liquors are carried away *from* any Ciſtern, as from a Fountain or Source, through *thoſe* Canals which, to his Knowledge, convey Liquors *to* that Ciſtern. (4.) *Hippocrates* ſays, the Blood is carried into the Lungs, from the Heart, for the Nouriſhment of the Lungs; without aſſigning any other Reaſon (*b*). Theſe ſeem to be poſitive Arguments, that *Hippocrates* knew nothing of this Matter; and accordingly, all his Commentators, Ancient and Modern, before Dr. *Harvey*, never interpreted the former Paſſages of the *Circulation of the Blood*: Neither would *Vander Linden*, in all probability, if Dr. *Harvey* had not helped him to the Notion; which he was then reſolved to find in *Hippocrates*, whom he ſuppoſed to be not the Father only, but the Finiſher alſo of the whole Medical Art. It is pretended to by none of the Ancients, or rather their Admirers for them, after *Hippocrates*. As for *Galen*, any Man that reads what he ſays of the Heart and Lungs, in the Sixth Book of his *De Uſu Partium*, muſt own, that he does not diſcourſe as if he were acquainted with

(*b*) *De Corde*, §. 10.

Modern

Modern Diſcoveries; and therefore it is not ſo much as pretended that he knew this Recurrent Motion of the Blood. Which alſo further ſhews, that if *Hippocrates* did know it, he explained himſelf ſo obſcurely, that *Galen* could not underſtand him; who, in all probability, underſtood *Hippocrates*'s Text as well as any of his Commentators, who have written ſince the *Greek* Tongue, and much more, ſince the *Ionic* Dialect has ceaſed to be a living Language.

Since the Ancients have no Right to ſo noble a Diſcovery, it may be worth while to enquire, to whom of the Moderns the Glory of it is due; for this is alſo exceedingly conteſted. The firſt Step that was made towards it, was, the finding that the whole Maſs of the Blood paſſes thorough the Lungs, by the Pulmonary Artery and Vein.

The firſt that I could ever find, who had a diſtinct *Idea* of this Matter, was *Michael Servetus*, a *Spaniſh* Phyſician, who was burnt for *Arianiſm*, at *Geneva*, near CXL Years ago. Well had it been for the *Church of Chriſt*, if he had wholly confined himſelf to his own Profeſſion! His Sagacity in this Particular, before ſo much in the dark, gives us great Reaſon to believe, that the World might then have had juſt Cauſe to

have bleſſed his Memory. In a Book (*c*) of his, entituled, *Chriſtianiſmi Reſtitutio*, printed in the Year MDLIII. (*d*) he clearly aſſerts, that the Blood paſſes thorough the Lungs, from the Left to the Right Ventricle of the Heart; and not thorough the *Partition* which divides the two Ventricles, as was at that Time commonly believed. How he introduces it, or in which of the Six Diſcourſes, into which *Servetus* divides his Book, it is to be found, I know not, having never ſeen the Book my ſelf. Mr. *Charles Bernard*, a very learned and eminent Chirurgeon of *London*, who did me the Favour to communicate this Paſſage to me, (ſet down at length in the Margin) which was tranſcribed out of *Servetus*, could inform me no further, only that he had it from a learned Friend of his, who had himſelf copied it from *Servetus*.

(*c*) *Vitalis Spiritus in ſiniſtro cordis ventriculo ſuam Originem habet, juvantibus maximè pulmonibus ad ipſius generationem. Eſt ſpiritus tenuis, caloris vi elaboratus, flavo colore, igneâ potentiâ, ut ſit quaſi ex puriore ſanguine lucidus vapor: generatur ex facta in pulmone mixtione inſpirati aëris cum elaborato ſubtili ſanguine, quem dexter ventriculus ſiniſtro communicat. Fit autem communicatio hæc non per parietem cordis medium ut vulgo creditur, ſed magno artificio à dextro cordis ventriculo, longo per pulmones ductu, agitatur ſanguis ſubtilis; à pulmonibus præparatur, flavus ejicitur, & à venâ arteriosâ in arteriam venoſam transfunditur; deinde in ipsâ arteriâ venosâ inſpirato aëri miſcetur & expiratione à fuligine repurgatur; atque ita tandem à ſiniſtro cordis ventriculo totum mixtum per diaſtolen attrahitur, apta ſupellex ut fiat ſpiritus vitalis.* Server. Chriſtian. Reſtit.

(*d*) Vid. *Sandii Bibliothecam Anti-Trinitariorum*, p. 13.

Realdus Columbus, of *Cremona*, was the next that ſaid any thing of it, in his *Anatomy*, printed at *Venice*, MDLIX. in *Folio*; and

and at *Paris*, in MDLXXII. in *Octavo*; and afterwards elſewhere. There he aſſerts the ſame (*e*) Circulation thorough the Lungs, that *Servetus* had done before; but ſays, that no Man had ever taken notice of it before him, or had written any thing about it: Which ſhews that he did not copy from *Servetus*; unleſs one ſhould ſay, that he ſtole the Notion, without mentioning *Servetus*'s Name; which is injurious, ſince in theſe Matters the ſame thing may be, and very often is obſerved by ſeveral Perſons, who never acquainted each other with their Diſcoveries. But *Columbus* is much more particular; (*f*) for he ſays, That the Veins lodge the whole Maſs of the Blood

(*e*) *Duæ inſunt cordi cavitates*, h. e. *ventriculi duo*; *ex his alter à dextris eſt, à ſiniſtris alter; dexter ſiniſtro multò eſt major; in dextro ſanguis adeſt naturalis, ac vitalis in ſiniſtro: illud autem obſervatu pulcrum eſt, ſubſtantiam cordis dextrum ventriculum ambientem tenuem ſatis eſſe, ſiniſtram verò craſſam; & hoc tum æquilibrii causâ factum eſt, tum ne ſanguis vitalis, qui tenuiſſimus eſt, extra reſudaret. Inter hos ventriculos ſeptum adeſt, per quod fere omnes exiſtimant ſanguini à dextro ad ſiniſtrum aditum patefieri; id ut fiat facilius, in tranſitu ob vitalium ſpirituum generationem tenuem reddi: ſed longâ errant viâ: nam ſanguis per arterioſam venam ad pulmonem fertur, ibique attenuatur; deinde cum aëre unà per arteriam venalem ad ſiniſtrum cordis ventriculum defertur; quod nemo hactenus aut animadvertit, aut ſcriptum reliquit.* Reald. Columb. Anat. lib. vii. p. 325. Edit. Lut.

(*f*) *Idcirco quando dilatatur, ſanguinem à cavâ venâ in dextrum ventriculum ſuſcipit, nec non ab arteriâ venoſâ ſanguinem paratum ut diximus unà cum aëre in ſiniſtrum: propterea membranæ illæ demittuntur & ingreſſui cedunt: nam cum cor coarctatur, hæ clauduntur; ne quod ſuſciperetur per eaſdem vias retrocedat; eodémque tempore membranæ tum magnæ arteriæ, tum venæ arterioſæ recluduntur, aditúmque præbent ſpirituoſo ſanguini exeunti, qui per univerſum corpus funditur, ſanguiníque naturali ad pulmones delato. Res itaque ſemper habet, cum dilatatur, quas prius memoravimus, recluduntur, clauduntur reliquæ, itáque comperies ſanguinem qui in dextrum ventriculum ingreſſus eſt, non poſſe in cavam venam retrocedere.* Ibid. pag. 330. Vide quoque lib. xi. pag. 411.

in the *Vena Cava*, which carries it into the Heart, whence it cannot return the ſame Way that it went; from the Right Ventricle it is thrown into the Lungs by the Pulmonary Artery, where the Valves are ſo placed, as to hinder its Return that Way into the Heart, and ſo it is thrown into the Left Ventricle, and by the *Aorta* again, when enliven'd by the Air, diffuſed thorough the whole Body.

Some Years after appeared *Andreas Cæſalpinus*, who printed his *Peripatetical Queſtions* at *Venice*, in *Quarto*, in MDLXXI. And afterwards, with his *Medical Queſtions*, at the ſame Place, in MDXCIII. He is rather more particular than *Columbus*, eſpecially in examining how Arteries and Veins join at their Extremities; which he ſuppoſes to be by opening their Mouths into each other: And he uſes the word *Circulation* in his *Peripatetical Queſtions*, which had never been uſed in that ſence before. He alſo takes notice, that the Blood ſwells below the Ligature in Veins, and urges that in Confirmation of his Opinion. Some Hints of this Matter are likewiſe to be found in *Conſtantinus Varolius*, who printed his *Anatomy* in the Year MDXCIX.

At laſt, Dr. *William Harvey* printed a Diſcourſe on purpoſe, upon this Subject,

at

at *Francfort*, in MDCXXVIII. This Notion had only been occaſionally and ſlightly treated of by *Columbus* and *Cæſalpinus*, who themſelves, in all probability, did not know the Conſequence of what they aſſerted; and therefore it was never applied to other Purpoſes, either to ſhew the Uſes of the other *Viſcera*, or to explain the Natures of Diſeaſes: Neither, for any thing that appears at this day, had they made ſuch numbers of Experiments as were neceſſary to explain their Doctrine, and to clear it from Oppoſition. All this Dr. *Harvey* undertook to do, and with indefatigable Pains traced the viſible Veins and Arteries throughout the Body, in their whole Journey *from* and *to* the Heart, ſo as to demonſtrate, even to the moſt incredulous, not only that the Blood circulates thorough the Lungs and Heart, but the very Manner how, and the Time in which that great Work is performed. When he had once proved that the Motion of the Blood was ſo rapid as we now find it is, then he drew ſuch Conſequences from it, as ſhewed that he throughly underſtood his Argument, and would leave little, at leaſt as little as he could, to future Induſtry to diſcover in that particular Part of Anatomy. This gave him a juſt Title to the Honour of ſo Noble a Diſcovery,

covery, since what his Predecessors had said before him, was not enough understood, to form just Notions from their Words. One may also observe how gradually this Discovery, as all abstruse Truths of Humane Disquisition, was explained to the World. *Hippocrates* first talked of the *Usual Motion* of the *Blood*. *Plato* said, That the *Heart* was the *Original* of the *Veins*, and of the *Blood*, that was carried about every Member of the Body. *Aristotle* also, somewhere, speaks of a *Recurrent Motion of the Blood*. Still all this was only *Opinion* and *Belief*: It was Rational, and became Men of their Genius's; but, not having as yet been made evident by Experiments, it might as easily be denied as affirmed. *Servetus* first *saw* that the Blood passes thorough the Lungs; *Columbus* went further, and shew'd the Uses of the *Valves*, or *Trap-doors* of the Heart, which let the Blood *in* and *out* of their respective Vessels, but not the self same Road. Thus the Way was just open when Doctor *Harvey* came, who built upon the First Foundations: To make his Work yet the easier, the Valves of the Veins, which were discovered by F. *Paul* the *Venetian*, had not long before been explained by *Fabricius ab Aqua-Pendente*, whence the Circulation was yet more clearly demonstrated.

There

There was one thing ſtill wanting to compleat this Theory, and that was, the Knowledge how the Veins received that Blood which the Arteries diſcharged; firſt it was believed that the Mouths of each ſort of Veſſels joined into one another: That Opinion was ſoon laid aſide, becauſe it was found that the Capillary Veſſels were ſo extremely ſmall, that it was impoſſible with the naked Eye to trace them. This put them upon imagining that the Blood ouzes out of the Arteries, and is abſorbed by the Veins, whoſe ſmall Orifices receive it, as it lies in the Fibres of the Muſcles, or in the Parenchyma's of the Bowels: Which Opinion has been generally received by moſt Anatomiſts ſince Dr. *Harvey*'s Time. But Monſieur *Leeuwenhoek* has lately found in ſeveral ſorts of Fiſhes (*g*), which were more manageable by his Glaſſes than other Animals, that Arteries and Veins are really continued Syphons variouſly wound about each other towards their Extremities in numberleſs Mazes, over all the Body: And others have found (*h*) what he ſays to be very true, in a Water Newt. So that this Diſcovery has paſſed unconteſted. And ſince it has been conſtantly found, that Nature follows like Methods in all ſorts of Animals, where ſhe uſes the

(*g*) Letter 65, 66.

(*h*) Philoſ. Tranſact. *numb.* 177.

the ſame ſorts of Inſtruments, it will always be believed, that the Blood circulates in Men, after the ſame Manner as it does in *Eels*, *Perches*, *Pikes*, *Carps*, *Bats*, and ſome other Creatures, in which Monſieur *Leeuwenhoek* tried it. Though the Ways how it may be viſible to the Eye, in Humane Bodies, have not, that I know of, been yet diſcovered. However, this Viſible *Circulation of the Blood* in theſe Creatures, effectually removes Sir *William Temple's* Scruple, who ſeems unwilling to believe the *Circulation of the Blood*, becauſe he could not ſee it: His Words
(i) 44,45. are theſe; (*i*) *Nay, it is diſputed whether* Harvey's Circulation of the Blood *be true or no; for though Reaſon may ſeem to favour it more than the contrary Opinion, yet Senſe can very hardly allow it; and to ſatisfie Mankind, both theſe muſt concurr.* Senſe therefore here allows it, and that this *Senſe* might the ſooner *concurr*, Monſieur *Leeuwenhoek* deſcribes the Method how this Experiment may be tried in his LXVI^th^. Letter. The Inferences that may be made from this noble Diſcovery are obvious, and ſo I ſhall not ſtay to mention them.

CHAP.

CHAP. XIX.

Farther Reflections upon Ancient and Modern Anatomy.

IF after this long Enquiry into the Firſt Diſcovery of the *Circulation of the Blood*, it ſhould be found that the *Anatomy* of the Heart was but ſlightly known to the Ancients, it will not, I ſuppoſe, be a Matter of any great Wonder. The Firſt Opinion which we have of the Texture of the Heart, was that of *Hippocrates* (*k*), That it is a very ſtrong Muſcle. This, though true, was rejected afterwards, for want of knowing its true Uſe. Its Internal Diviſions, its Valves, and larger Viſible Fibres, were well known, and diſtinctly deſcribed by the Ancients; only they were miſtaken in thinking that there is a Communication between the Ventricles thorough the *Septum*, which is now generally known to be an Errour. The Order of the Muſcular Fibres of the Heart was not known before Dr. *Lower*, who diſcovered them to be Spiral like a Snail-Shell, as if ſeveral Skains of Threads of differing Lengths had been wound up into a Bottom of ſuch a Shape, hollow, and

(*k*) *De Corde*, §. 4.

and divided within. By all these Discoveries *Alphonsus Borellus* (*l*) was enabled to give such a Solution of all the Appearances of the Motion of the Heart, and of the Blood in the Arteries, upon Mathematical and Mechanical Principles, as will give a more satisfactory Account of the wonderful Methods of Nature, in dispensing Life and Nourishment to every Part of the Body, than all that had ever been written upon these Subjects before those things were found out.

(*l*) De Motu Animalium, Part II. cap. 5.

Below the *Midriff* are several very noble *Viscera*: The *Stomach*, the *Liver*, the *Pancreas* or *Sweet-bread*, the *Spleen*, the *Reins*, the *Intestines*, the *Glands of the Mesentery*, and the *Instruments of Generation of both Sexes*; in the Anatomical Knowledge of all which Parts, the Ancients were exceedingly defective.

The *Coats of the Stomach* have been separated, and the several Fibres of the middle Coat examined by Dr. *Willis* (*m*) with more Exactness than formerly; he also has been very nice in tracing the Blood-Vessels and Nerves that run amongst the Coats, has evidently shewn that its Inside is covered with a glandulous Coat, whose Glands separate that Mucilage; which both preserves the Fibres from being injured by the Aliments which

(*m*) Pharmaceut. Rational.

which the Stomach receives, and concurrs with the Spittle to further the Digeſtion there performed; and has given a particular Account of all thoſe ſeveral Rows of Fibres which compoſe the muſculous Coat. To which if we add *Steno*'s Diſcovery of the Fibres of the Muſculous Coat of the Gullet, that they are Spiral in a double Order, one aſcending, the other deſcending, which run contrary Courſes, and mutually croſs each other in every Winding; with Dr. *Cole*'s (*n*) Diſcovery of the Nature of the Fibres of the Inteſtines, that they alſo move ſpirally, tho' not, perhaps, in a contrary Order, from the beginning of the *Duodenum*, to the end of the ſtreight Gut, the Anatomy of thoſe Parts ſeems to be almoſt compleat.

(*n*) Philoſ. Tranſact. n. 125.

The great Uſe of the *Stomach* and the *Guts*, is to prepare the Chyle, and then to tranſmit it thorough the Glands of the Meſentery into the Blood. This the Ancients knew very well; the Manner how it was done they knew not. *Galen* (*o*) held, that the Meſaraic Veins, as alſo thoſe which go from the Stomach to the Liver, carry the Chyle thither; which, by the Warmth of the Liver, is put into a Heat, whereby the Fæculencies are ſeparated from the more ſpirituous Parts, and by

(*o*) *De Uſu Partium*, l. 4. c. 2,3,4,5.

by their Weight ſink to the Bottom. The purer Parts go into the *Vena Cava*; the Dregs, which are of two ſorts, *Choler* and *Melancholy*, go into ſeveral Receptacles; the Choler is lodged in the Gall-Bladder, and *Porus Bilarius*: Melancholy is carried off by the Spleen. The Original of all theſe Notions, was Ignorance of the Anatomy of all theſe Parts, as alſo of the conſtant Motion of the Blood thorough the Lungs and Heart. *Herophilus*, who is commended as the ableſt Anatomiſt of Antiquity, found out (*p*) that there were Veins diſperſed quite through the Meſentery, as far as the ſmall Guts reach, which carried the Chyle from the Inteſtines into ſeveral *Glandulous Bodies*, and there lodged them. Theſe are the *Milky Veins* again diſcovered by *Aſellius* about L Years ago; and thoſe Glands which *Herophilus* ſpoke of, are probably that great Collection of Glands in the Meſentery, that is commonly called the *Pancreas Aſellii*. After *Herophilus*, none of the Ancients had the Luck to trace the Motions of the Chyle any farther, and ſo theſe Milky Veins were confounded with the Meſaraics, and 'twas commonly believed, That becauſe all Meſaraics carry the Blood from the Inteſtines into the Liver, therefore they carried Chyle alſo, when

(*p*) *De U. P.* l. 4. c. 19.

when there was any Chyle to carry; and hence, probably, it was that the Liver was believed to be the common Work-House of the Blood. But when *Aſellius* had traced the Chyle as far as the great Gland of the Meſentery, it was ſoon found not to lie there. And *Pecquet*, about XL Years ſince, diſcovered the *common Receptacle of the Chyle*, whither it is all brought. Thence he alſo found that it is carried, by particular Veſſels, thorough the Thorax, almoſt as high as the Left Shoulder, and there thrown into the Left Subclavian Vein, and ſo directly carried to the Heart. It has alſo been diſcovered, that in his Canal, uſually call'd *Ductus Thoracicus*, there are numerous Valves, which hinder the Return of the Chyle to the common Receptacle, ſo that it can be moved forwards, but not backwards.

Since this Paſſage of the Chyle has been diſcovered, it has been by ſome believed, that the *Milk* is conveyed into the Breaſts, by little Veſſels, from the *Ductus Thoracicus*. The whole Oeconomy of that Affair has been particularly deſcribed, very lately, by Mr. *Nuck*, before whoſe time it was but imperfectly known. He ſays therefore, that the Breaſts are Heaps of Glands, ſupplied with Blood by innumerable Ra-

mifications of the Axillary and Thoracic Arteries; ſome of which paſſing thorough the Breaſt-bone, unite with the Veſſels of the oppoſite Side. Theſe Arteries, which are unconceivably ſmall, part with the Milk in thoſe ſmall Glands, into ſmall Pipes, four or five of which meeting together, make one ſmall Trunk; of theſe ſmall Trunks, the large Pipes, which terminate in the Nipple, are made up; though before they arrive thither, they ſtraiten into ſo ſmall a compaſs, that a ſtiff Hair will juſt paſs thorough. The Nipple, which is a Fibrous Body, has ſeven or eight, or more Holes, thorough which every Pipe emits its Milk upon Suction; and leſt any one of them being ſtopp'd, the Milk ſhould ſtagnate, they all have croſs Paſſages into each other at the bottom of the Nipple, where it joins to the Breaſt.

The fore-mentioned Diſcovery of the Paſſage of the Chyle, obliged Men to re-examine the Notions which, till then, had generally obtained, concerning the Nature and Uſes of the *Liver*. Hitherto it had been generally believed, that the Blood was made there, and ſo diſperſed into ſeveral Parts, for the Uſes of the Body, by the *Vena Cava*. *Eraſiſtratus*, indeed, ſuppoſed (*q*) that its principal Uſe was,

(*q*) *Galen de V. P. l. iv. c. 13.*

was, to ſeparate the Bile, and to lodge it in its proper Veſſels: But, for want of farther Light, his Notion could not then be ſufficiently proved; and ſo it preſently fell, and was never revived, till *Aſellius*'s and *Pecquet*'s Diſcoveries put it out of doubt. Till *Malpighius* diſcovered its Texture by his Glaſſes, its Nature was very obſcure. But he has found out, (1.) That the Subſtance of the Liver is framed of innumerable Lobules, which are very often of a Cubical Figure, and conſiſt of ſeveral little Glands, like the Stones of Raiſins; ſo that they look like Bunches of Grapes, and are each of them cloathed with a diſtinct Membrane. (2.) That the whole Bulk of the Liver conſiſts of theſe Grape-ſtone-like Glands, and of divers ſorts of Veſſels. (3.) That the ſmall Branches of the *Cava*, *Porta*, and *Porus Bilarius*, run thorough all, even the leaſt of theſe Lobules, in an equal Number; and that the Branches of the *Porta* are as Arteries that convey the Blood *to*, and the Branches of the *Cava* are the Veins which carry the Blood *from* all theſe little Grape-ſtone-like Glands. From whence it is plain, that the Liver is a Glandulous Body, with its proper Excretory Veſſels, which carry away the Gall that lay before in the Maſs of the Blood.

Near the Liver lies the *Pancreas*, which *Galen* believed (*r*) to be a Pillow to support the Diviſions of the Veins, as they go out of the Liver; and, for what appears at preſent, the Ancients do not ſeem to have concerned themſelves any further about it. Since, it has been found to be a Glandulous Body, wherein a diſtinct Juice is ſeparated from the Blood; which, by a peculiar Canal, firſt diſcovered by *Georgius Wirtſungus*, a *Paduan* Phyſician, is carried into the *Duodenum*; where meeting with the Bile, and the Aliment juſt thrown out of the Stomach, aſſiſts and promotes the Buſineſs of Digeſtion.

(*r*) *De U. P.* l. v. c. 2.

The *Spleen* was as little underſtood as the *Pancreas*, and for the ſame Reaſons: Its Anatomy was unknown, and its Bulk made it very remarkable; ſomething therefore was to be ſaid about it: And what no Body could poſitively diſ-prove, might the eaſier be either received or contradicted. The moſt general Opinion was, that the groſſer Excrements of the Chyle and Blood were carried off from the Liver, by the *Ramus Splenicus*, and lodged in the Spleen, as in a common Ciſtern: But ſince the *Circulation of the Blood* has been known, it has been found, that the Blood can go from the Spleen to the Liver, but that nothing can return back

back again into the Spleen. And as for its Texture, (*s*) *Malpighius* has diſcover'd, that the Subſtance of the Spleen, deducting the numerous Blood-Veſſels and Nerves, as alſo the Fibres which ariſe from its Second Membrane, and which ſupport the other Parts, is made up of innumerable little Cells, like Honey-combs, in which there are vaſt Numbers of ſmall Glandules, which reſemble Bunches of Grapes; and that theſe hang upon the Fibres, and are fed by Twigs of Arteries and Nerves, and ſend forth the Blood there purged, into the *Ramus Splenicus*, which carries it into the Liver; to what Purpoſe, not yet certainly diſcovered.

(*s*) *De Liene.*

The Uſe of the *Reins* is ſo very conſpicuous, that, from *Hippocrates*'s Time, downwards, no Man ever miſtook it: But the Mechaniſm of thoſe wonderful Strainers was wholly unknown, till the ſo often mentioned *Malpighius* (*s*) found it out. He therefore, by his Glaſſes, diſcovered, that the Kidneys are not one uniform Subſtance, but conſiſt of ſeveral ſmall Globules, which are all like ſo many ſeveral Kidneys, bound about with one common Membrane; and that every Globule has ſmall Twigs from the emulgent Arteries, that carry Blood to it; Glands, in which the Urine is ſtrained from it;

(*t*) *De Renibus.*

Veins, by which the purified Blood is carried off to the Emulgent Veins, thence to go into the *Cava*; a Pipe, to convey the Urine into the great Basin in the middle of the Kidney; and a Nipple, towards which several of those small Pipes tend, and thorough which the Urine ouzes out of them into the Basin. This clear Account of the Structure of the Reins, has effectually confuted several Notions that Men had entertained, of some Secondary Uses of those Parts; since hereby it appears, that every Part of the Kidneys is immediately and wholly subservient to that single Work, of freeing the Blood from its superfluous *Serum*.

What has been done by Modern *Anatomists*, towards the Compleating of the Knowledge of the remaining Parts, I shall omit. That the Ancients likwise took Pains about them, is evident from the Writings of *Hippocrates*, *Aristotle* and *Galen*. The Discoveries which have since been made are so great, that they are, in a manner, undisputed: And the Books which treat of them are so well known, that it will not be suspected that I decline to enlarge upon them, out of a Dread of giving up more to the Ancients in this Particular, than I have done all along.

The

The Diſcoveries hitherto mention'd, have been of thoſe Parts or Humours of the Body, whoſe Exiſtence was well enough known to the Ancients. But, beſides them, other Humours, with Veſſels to ſeparate, contain, and carry them to ſeveral Parts of the Body, have been taken notice of; of which, in ſtrictneſs, the Ancients cannot be ſaid to have had any ſort of Knowledge. Theſe are, the *Lympha*, or Colourleſs Juice, which is carried to the Chyle and Blood, from ſeparate Parts of the Body: And the *Mucilage of the Joints*, which lubricates them, and the Muſcles, in their Motions. The Diſcovery of the *Lympha*, which was made about $\overline{XL}$ Years ago, is contended for by ſeveral Perſons. *Thomas Bartholine*, a *Dane*, and *Olaus Rudbeck*, a *Suede*, publiſhed their Obſervations about the ſame time: And Dr. *Jolliffe*, an *Engliſh-Man*, ſhewed the ſame to ſeveral of his Friends, but without publiſhing any thing concerning them. The Diſcoveries being undoubted, and all Three working upon the ſame Materials, there ſeems no reaſon to deny any of them the Glory of their Inventions. The Thing which they found, was, that there are innumerable ſmall, clear Veſſels in many Parts of the Body, chiefly in the Lower Belly, which convey

a Colourleſs Juice, either into the common Receptacle of the Chyle, or elſe into the Veins, there to mix with the Blood. The *Valves* which *Frederic Ruyſch* found and demonſtrated in them, about the ſame Time, manifeſtly ſhewed, that this is its Road; becauſe they prove, that the *Lympha* can go forwards from the Liver, Spleen, Lungs, Glands of the Loins and Neck, or any other Place, whence they ariſe, towards ſome Chyliferous Duct, or Vein; but cannot go back from thoſe Chyliferous Ducts, or Veins, to the Place of their Origination. What this Origination is, was long uncertain, it not being eaſie to trace the ſeveral Canals up to their ſeveral Sources. *Steno* (*u*) and *Malpighius* (*w*) did, with infinite Labour, find, that abundance of Lympheducts paſſed thorough thoſe numerous *Conglobate Glands* that are diſperſed in the *Abdomen* and *Thorax*; which made them think that the Arterious Blood was there purged of its *Lympha*, that was from thence carried off into its proper Place, by a Veſſel of its own. But Mr. *Nuck* has ſince (*x*) found, that the Lympheducts ariſe immediately from Arteries themſelves; and that many of them are percolated thorough thoſe *Conglobate Glands*, in their Way to the Receptacle

(*u*) *Obſervat. Anatom.*

(*w*) *Epiſt. de Glandul. Conglobat.*

(*x*) *Adenographh.*

ceptacle of the Chyle, or thoſe Veins which receive them. By theſe, and innumerable other Obſervations, the Uſes of the Glands of the Body have been found out; all agreeing in this one thing, namely, That they ſeparate the ſeveral Juices that are diſcernible in the Body, from the Maſs of the Blood wherein they lay before. From their Texture they have of late been divided into *Conglomerate* and *Conglobate*. The *Conglomerate Glands* conſiſt of many ſmaller Glands, which lie near one another, covered with one common Membrane, with one or more common Canals, into which the ſeparated Juice is poured by little Pipes, coming from every ſmaller Glandule; as in the Liver, the Kidneys, the Pancreas, and Salival Glands of the Mouth. The *Conglobate Glands* are ſingle, often without an Excretory Duct of their own, only perforated by the Lympheducts. Of all which Things, as Eſſential to the Nature of Glands, the Ancient Anatomiſts had no ſort of Notion.

The *Mucilage of the Joints and Muſcles* was found out by Dr. *Havers* (*y*). He diſcovered in every Joint, particular Glands, out of which iſſues a Mucilaginous Subſtance, whoſe Nature he examined by numerous Experiments; which, with

(*y*) *Oſteolog.*

with the Marrow ſupplied by the Bones, always ſerves to oil the Wheels, that ſo our Joints and Muſcles might anſwer thoſe Ends of Motion, for which Nature deſigned them. This was a very uſeful Diſcovery, ſince it makes abundance of Things that were obſcure in that part of Anatomy, plain, and facile to be underſtood: And, among other Things, it ſhews the Uſe of that excellent Oil which is contained in our Bones, and there ſeparated by proper Strainers, from the Maſs of the Blood; eſpecially, ſince, by a nice Examination of the true inward Texture of all the Bones and Cartilages of the Body, he ſhew'd how this Oil is communicated to the Mucilage, and ſo united, as to perform their Office. And if one compares what Dr. *Havers* ſays of Bones and Cartilages, with what had been ſaid concerning them before him, his Obſervations about their Frame may well be added to ſome of the nobleſt of all the former Diſcoveries.

Theſe are ſome of the moſt remarkable Inſtances, how far the Knowledge of the Frame of our Bodies has been carried in our Age. Several Obſervations may be made concerning them, which will be of Uſe to the preſent Queſtion. (1.) It is evident, that only the moſt viſible Things were

were anciently known; ſuch alone as might be diſcovered without great Nicety. Muſcles and Bones are eaſily ſeparable; their Length is ſoon traced, and their Origination preſently found. The ſame may be truly ſaid of large Blood-Veſſels, and Nerves: But when they come to be exquiſitely ſub-divided, when their Smalneſs will not ſuffer the Eye, much leſs the Hand, to follow them, then the Ancients were conſtantly at a Loſs: For which Reaſon, they underſtood none of the *Viſcera*, to any tolerable degree. (2.) One may perceive, that every new Diſcovery ſtrengthens what went before; otherwiſe the World would ſoon have heard of it, and the erroneous Theories of ſuch Pretenders to new Things would have been exploded and forgotten, unleſs by here and there a curious Man, that pleaſes himſelf with reading obſolete Books. *Nullius in Verba* is not only the Motto of the *ROYAL SOCIETY*, but a received Principle among all the Philoſophers of the preſent Age: And therefore, when once any new Diſcoveries have been examined, and received, we have more Reaſon to acquieſce in them, than there was formerly. This is evident in the *Circulation of the Blood*: Several Veins and Arteries have been found, at leaſt, more

more exactly traced, ſince, than they were in Dr. *Harvey*'s Time. Not one of theſe Diſcoveries has ever ſhewn a ſingle Inſtance of any Artery going *to*, or of any Vein coming *from* the Heart. Ligatures have been made of infinite Numbers of Veſſels; and the Courſe of all the Animal Juices, in all manner of living Creatures, has thereby been made viſible to the naked Eye; and yet not one of theſe has ever weakened Dr. *Harvey*'s Doctrine. The Pleaſure of Deſtroying in Matters of this kind, is not much leſs than the Pleaſure of Building. And therefore, when we ſee that thoſe Books which have been written againſt ſome of the eminenteſt of theſe Diſcoveries, though but a few Years ago, comparatively ſpeaking, are ſo far dead, that it is already become a Piece of Learning even to know their Titles, we have ſufficient Aſſurance that thoſe Diſcoverers, whoſe Writings out-live Oppoſition, neither deceive themſelves nor others. So that, whatſoever it might be formerly, yet in this Age, general Conſent in Phyſiological Matters, eſpecially after a long Canvaſs of the Things conſented to, is an almoſt infallible Sign of Truth. (3.) The more Ways are made uſe of to arrive at any one particular Part of Knowledge, the

ſurer

ſurer that Knowledge is, when it appears that theſe different Methods lend Help each to other. If *Malpighius*'s, or *Leeuwenhoek*'s Glaſſes had made ſuch Diſcoveries as Men's Reaſon could not have agreed to; if objects had appeared confuſed and diſorderly in their Microſcopes; if their Obſervations had contradicted what the naked Eye reveals, then their Verdict had been little worth. But when the Diſcoveries made by the Knife and the Microſcope, diſagree only as Twi-light and Noon-day, then a Man is ſatisfied that the Knowledge which each affords to us, differs only in Degree, not in Sort. (4.) It can ſignifie nothing in the preſent Controverſie, to pretend that Books are loſt; or to ſay, that, for ought we know, *Herophilus* might anciently have made this Diſcovery, or *Eraſiſtratus* that; their Reaſonings demonſtrate the Extent of their Knowledge, as convincingly as if we had a Thouſand old Syſtems of Ancient Anatomy extant. (5.) In judging of Modern Diſcoveries, one is nicely to diſtinguiſh between *Hypotheſis* and *Theory*. The Anatomy of the Nerves holds good, whether the Nerves carry a Nutritious Juice to the ſeveral Parts of the Body, or no. The *Pancreas* ſends a Juice into the *Duodenum*, which mixes there with the Bile,

Bile, let the Nature of that Juice be what it will. Yet here a nice Judge may obſerve, that every Diſcovery has mended the Hypotheſes of the Modern Anatomiſts; and ſo it will always do, till the Theories of every Part, and every Juice, be as entire as Experiments and Obſervations can make them.

As theſe Diſcoveries have made the Frame of our own Bodies a much more intelligible Thing than it was before, though there is yet a great deal unknown; ſo the ſame Diſcoveries having been applied to, and found in almoſt all ſorts of known Animals, have made the Anatomy of Brutes, Birds, Fiſhes and Inſects, much more perfect than it could poſſibly be in former Ages. Moſt of the Rules which *Galen* lays down in his *Anatomical Adminiſtrations*, are, concerning the Diſſection of Apes. If he had been now to write, beſides thoſe tedious Advices how to part the Muſcles from the Membranes, and to obſerve their ſeveral Inſertions and Originations, the Jointings of the Bones, and the like, he would have taught the World how to make Ligatures of all ſorts of Veſſels, in their proper Places; what Liquors had been moſt convenient to make Injections with, thereby to diſcern the Courſes of Veins, Arteries, Chyle-Veſſels,

ſels, or Lympheducts; how to unravel the Teſticles; how to uſe Microſcopes to the beſt Advantage: He would have taught his Diſciples when and where to look for ſuch and ſuch Veſſels or Glands; where Chymical Trials were uſeful; and what the Proceſſes were, by which he made his Experiments, or found out his Theories: Which Things fill up every Page in the Writings of later Diſſectors. This he would have done, as well as what he did, had theſe Ways of making Anatomical Diſcoveries been then known and practiſed. The World might then have expected ſuch Anatomies of Brutes, as Dr. *Tyſon* has given of the *Rattle-Snake*; or Dr. *Moulin*, of the *Elephant*: Such Diſſections of Fiſhes as Dr. *Tyſon*'s of the *Porpeſſe*; and *Steno*'s, of a *Shark*'s *Head*: Such of Inſects as *Malpighius*'s of a *Silk-Worm*; *Swammerdam*'s, of the *Ephemeron*; Dr. *Liſter*'s, of *Snails*, and *Teſtaceous Animals*; Mr. *Waller*'s, of the *Flying Gloeworm*; and the ſame Dr. *Tyſon*'s, of *Long and Round Body-Worms*. All which ſhew Skill and Induſtry, not conceivable by a Man that is not a little verſed in theſe Matters.

To this *Anatomy* of *Bodies that have Senſitive Life*, we ought to add the *Anatomy of Vegetables*, begun and brought to

to great Perfection in *Italy* and *England* at the ſame Time, by *Malpighius* and Dr. *Grew*. By their Glaſſes they have been able to give an Acount of the different Textures of all the Parts of Trees, Shrubs and Herbs; to trace the ſeveral Veſſels which carry Air, Lympha, Milk, Roſin and Turpentine, in thoſe Plants which afford them; to deſcribe the whole Proceſs of Vegetation, from Seed to Seed; and, in a word, though they have left a great deal to be admired, becauſe it was to them incomprehenſible; yet they have diſcovered a great deal to be admired, becauſe of its being known by their Means.

CHAP. XX.

Of Ancient and Modern Natural Hiſtories of Elementary Bodies and Minerals.

HAving now finiſhed my Compariſon of *Ancient and Modern Anatomy*, with as much Exactneſs as my little Inſight into thoſe Things would give me leave, I am ſenſible that moſt Men will think that I have been too tedious. But, beſides

beſides that I had not any where found it carefully done to my Hands, (though it is probable that it has in Books which have eſcaped my Notice,) I thought that it would be a very effectual Inſtance, how little the Ancients may have been preſumed to have perfected any one Part of Natural Knowledge, when their own Bodies, which they carried about with them, and which, of any thing, they were the nearlieſt concerned to know, were, comparatively ſpeaking, ſo very imperfectly traced. However, in the remaining Parts of my Parallel, I ſhall be much ſhorter; which, I hope, may be ſome Amends for my too great Length in this.

From thoſe *Inſtruments*, or *Mechanical Arts*, whether Ancient or Modern, by which *Knowledge* has been advanced, I am now to go to the *Knowledge* it ſelf. According to the Method already propoſed, I am to begin with *Natural Hiſtory* in its uſual Acceptation, as it takes in the *Knowledge* of the ſeveral Kinds of *Elementary Bodies*, *Minerals*, *Plants*, *Inſects*, *Beaſts*, *Birds* and *Fiſhes*. The Uſefulneſs and the Pleaſure of this Part of Learning, is too well known to need any Proof. And beſides, it is a Study, about which the greateſt Men of all Ages have

employed themſelves. Of the very few loſt Books that are mentioned in the *Old Teſtament*, one was an *Hiſtory of Plants*, written by the Wiſeſt of Men, and he a King. So that there is Reaſon to believe, that *Natural Hiſtory* was cultivated with abundance of Care by all thoſe who did not place the Perfection of Knowledge in the Art of Wrangling about Queſtions, which were either uſeleſs, or which could not eaſily be decided.

Before I enter into Particulars, it is neceſſary to enquire what are the greateſt Excellencies of a Compleat Hiſtory of any one ſort of Natural Bodies. This may ſoon be determined. That Hiſtory of any Body, is certainly the beſt, which, by a full and clear Deſcription, lays down all the Characteriſtical Marks of the Body then to be deſcribed; ſo as that its Specifical Idea may be clearly form'd, and it ſelf certainly and eaſily diſtinguiſh'd from any other Body, though, at firſt View, it be never ſo like it; which enumerates all its known Qualities; which ſhews whether there are any more beſides thoſe commonly obſerved; and, laſt of all, which enquires into the ſeveral Ways whereby that Body may be beneficial or hurtful to Man, or any other Body; by giving a particular Account of the ſeveral

Phænomena

Phænomena which appear upon its Application to, or Combination with other Bodies, of like, or unlike Natures. All this is plainly neceſſary, if a Man would write a full Hiſtory of any ſingle Species of Animals, Plants, Inſects, or Minerals, whatſoever. Or, if he would draw up a General Hiſtory of any one of theſe *Univerſal Sorts*, then he ought to examine wherein every Species of this *Univerſal Sort* agrees each with other; or wherein they are diſcriminated from any other *Univerſal Sort* of Things: And thus, by degrees, deſcend to Particulars, and range every Species, not manifeſtly Anomalous, under its own Family, or Tribe; thereby to help the Memory of Learners, and aſſiſt the Contemplations of thoſe who, with Satisfaction to themſelves and others, would Philoſophize upon this amazing Variety of Things.

By this Teſt the Compariſon may be made. I ſhall begin with the ſimpleſt Bodies firſt; which, as they are the commoneſt, ſo, one would think, ſhould have been long ago examined with the ſtricteſt Care. By theſe I mean, *Air*, *Water*, *Fire*, *Earth*, commonly called *Elements*. Three of theſe are certainly diſtinct and real Bodies, endued with proper and peculiar Qualities, and ſo come under the preſent Queſtion.

Of the *History of Air* the Ancients seemed to know little more than just what might be collected from the Observation of its most obvious Qualities. Its Necessity for the immediate Subsistence of the Life of all sorts of Animate Bodies, and the unspeakable Force of Rapid Winds, or Air forcibly driven all one Way, made it be sufficiently observed by all the World; whilst its Internal Texture, and very few of its remoter Qualities, were scarce so much as dreamt of by all the Philosophers of Antiquity. Its Weight only was known to *Aristotle* (z), (or the Author of the Book *de Cælo*,) who observed, that a full Bladder out-weighed an empty one. Yet this was carried no further by any of the Ancients, that we know of; dis-believed by his own School, who seemed not to have attended to his Words, opposed and ridiculed when again revived, and demonstrably proved, by the Philosophers of the present Age. All which are Evidences, that anciently it was little examined into, since Proofs were wanting to evince that, which Ignorance only made disputable. But this has been spoken to already; I shall therefore only add, that, besides what Mr. *Boyle* has written concerning the Air, we may consult *Otto Guerick*'s *Magdebourg-Experiments*; the *Experiments of the Academy*

(z) *De Cælo*, l. 4. c. 4.

Academy del Cimento; *Sturmius*'s *Collegium Curiosum*; Mr. *Halley*'s *Discourses concerning Gravity*, and the *Phænomena of the Baroscope*, in the *Philosophical Transactions* (*a*). From all which, we shall find, not only how little of the Nature of the Air was anciently known; but also, that there is scarce any one Body, whose Theory is now so near being compleated, as is that of the Air.

(*a*) Num. 179, & 181.

The *Natural History of Earth and Water* comes under that of *Minerals*: *Fire*, as it appears to our Senses, seems to be a Quality, rather than a Substance; and to consist in its own Nature, in a Rapid Agitation of Bodies, put into a quick Motion; and divided by this Motion, into very small Parts. After this had been once asserted by the *Corpuscularian* Philosophers, it was exceedingly strengthned by many Experimental Writers, who have taken abundance of Pains to state the whole *Doctrine of Qualities* clearly, and intelligibly; that so Men might know the difference between the Existence or Essential Nature of a Body, and its being represented to our Senses under such or such an Idea. This is the Natural Consequence of proceeding upon clear and intelligible Principles; and resolving to admit nothing as conclusive, which cannot be ma-

nifeſtly conceived, and evidently diſtinguiſhed from every thing elſe. Here, if in any thing, the old Philoſophers were egregiouſly defective: What has been done ſince, will appear, by conſulting, among others, the Diſcourſes which Mr. *Boyle* has written upon moſt of the conſiderable Qualities of Bodies, which come under our Notice; ſuch as his *Hiſtories of Fluidity and Firmneſs, of Colours, of Cold,* his *Origin of Forms and Qualities, Experiments about the Mechanical Production of divers particular Qualities,* and ſeveral others, which come under this Head; becauſe they are not Notions framed only in a Cloſet, by the help of a lively Fancy; but genuine Hiſtories of the *Phænomena* of Natural Bodies; which appeared in vaſt Numbers, after ſuch Trials were made upon them, as were proper to diſcover their ſeveral Natures.

And therefore, that it may not be thought that I miſtake every plauſible Notion of a Witty Philoſopher, for a new Diſcovery of Nature, I muſt deſire that my former Diſtinction between *Hypotheſes* and *Theories* may be remembred. I do not here reckon the ſeveral *Hypotheſes* of *Des Cartes, Gaſſendi,* or *Hobbes,* as Acquiſitions to real Knowledge, ſince they may only be Chimæra's, and amuſing Notions,

Notions, fit to entertain working Heads. I only alledge ſuch Doctrines as are raiſed upon faithful Experiments, and nice Obſervations; and ſuch Conſequences as are the immediate Reſults of, and manifeſt Corollaries drawn from, theſe Experiments and Obſervations: Which is what is commonly meant by *Theories*. But of this more hereafter.

That the *Natural Hiſtory of Minerals* was anciently very imperfect, is evident from what has been ſaid of *Chymiſtry* already; to which, all the Advances that have ever been made in that Art, unleſs when Experiments have been tried upon *Vegetable* or *Animal Subſtances*, are properly to be referred. I take *Minerals* here in the largeſt ſence; for all ſorts of *Earths*, *Sulphurs*, *Salts*, *Stones*, *Metals*, and *Minerals* properly ſo called. For *Chymiſtry* is not only circumſtantially uſeful, but eſſentially neceſſary here; ſince a great many Minerals of very differing Natures would never have been known to have belonged to ſeveral Families, if they had not been examined in the Furnaces of the Chymiſts. Nay, moſt *Foſſils* are of ſuch a Nature, that what ſort of Minerals they contain, cannot be known, till they be tried in the Fire. Worthleſs Marcaſites cannot any otherwiſe be diſtinguiſht from

rich Lumps of Ore. For this Reaſon, and becauſe the Subterraneous World is not ſo eaſily acceſſible, the Knowledge of *Foſſils*, taken in the general, has received leſs Advancement than any one Part of Natural Learning. But I ſhall rather chuſe to ſpeak here of the Diſcoveries which have been made in the Mineral Kingdom without the help of Chymiſtry: The greateſt of which is, of a Stone which the the Ancients admired (*b*), without ever examining to what Uſes it might be applied; and that is the *Magnet*; the nobleſt Properties whereof Sir *William Temple* acknowledges to be anciently unknown (*c*): Which is more, indeed, than what ſome do (*d*), who, at the ſame time, make our Fore-fathers to have been extremely ſtupid, that could ſuffer ſuch a Diſcovery to be ever loſt. So that all that can be ſaid of the Advances which, by the Uſes of the *Load-ſtone*, have been made in ſeveral Parts of Learning, do not in the leaſt affect Sir *William Temple*. However, I ſhall mention ſome of the greateſt; becauſe he charges the Moderns with not making all thoſe

(*b*) Their Opinions are collected by *Gaſſendi*, in his *Animadverſions upon* Laërtius's *Life of* Epicurus, *p.* 362, 363.

(*c*) P. 48.

(*d*) This they have collected from a Paſſage in *Plautus*, *Merc.* Act. 5. Sc. 2. *Huc Secundus Ventus nunc eſt, cape modo vorſoriam*; where by *vorſoria* they underſtand the *Compaſs*, becauſe the Needle always points towards the North: Whereas *vorſoria* is nothing but that Rope with which the Mariners turned their Sails.

thoſe Uſes of ſo noble an Invention, which he ſuppoſes the Ancient *Greeks* and *Romans* would have made, had it fallen into their Hands: Which makes him aſſert, that the Diſcoveries hereby made in remote Countries have been rather purſued to accumulate Wealth (*e*), than to encreaſe Knowledge. Now, if both theſe can be done at once, there is no harm done: And ſince there is no Diſpute of the one, I think it will be an eaſie Matter to prove the other. I ſhall name but a few Particulars, moſt of them rather belonging to another Head.

(*e*) P. 49.

Geography therefore was anciently a very imperfect Study, for want of this Knowledge of the Properties of the *Load-ſtone*. The Figure of the Earth could formerly only be gueſs'd at; which Sir *William Temple*'s admired *Epicurus* (*f*) did, for that Reaſon, deny to be Round; wherein he ſeems to have been more reaſonable, than in many other of his Aſſertions; becauſe he thought it an Affront to the Underſtanding of Man, to be determined by bare Conjectures, in a Matter which could at that time be no other Way decided. Whereas now, moſt Parts of the Ocean being made eaſily acceſſible, the Latitudes, and reſpective Bearings of every Place, are commonly known: The Nature and Appearances

(*f*) Vid. *Gaſſendi*'s Animadverſions upon *Laërtius*'s *Epicurus*, pag. 672.

pearances of Winds and Tides are become familiar, and have been nicely examined by Intelligent Men in all Parts of the World: The Influence of the Moon, joined with the Motion of the Earth, have been taken in upon almoſt infallible Grounds, to found Theories of the Sea's Motion upon. And there are great Numbers of other noble, pleaſant and uſeful Propoſitions in *Geography*, *Aſtronomy* and *Navigation*, which ultimately owe their Original to the Diſcovery of that ſingle Quality of this wonderful Stone, *that it always points towards the North.* If theſe Sciences have brought to us the Wealth of the *Indies*; if they have enlarged the Commerce and Intercourſe of Mankind, it is ſo far from being a Diſparagement to the Induſtry of the Moderns, who have cultivated them to ſuch uſeful Purpoſes, that it is the higheſt Character that could be given of thoſe Men, that they purſued their Inventions to ſuch noble Ends. Knowledge, not reduced to Practice, when that is poſſible, is ſo far imperfect, that it loſes its principal Uſe. And it is not for acquiring Wealth, but for miſ-employing it when it is acquired, that a Man ought to be blamed.

Now, to compleat what I have to ſay of *Geography* all at once, I ſhall take notice,

tice, that as the Improvements by Navigation have made all the Sea-Coaſts of the Univerſe acceſſible, ſo the Art of Engraving upon Copper-Plates has made it eaſie for Men to draw ſuch Draughts of every particular Coaſt, as will imprint laſting and juſt Idea's of all the Parts of the known World. For want of this, the Ancient Deſcriptions even of thoſe Countries which they knew, were rude, and imperfect: Their Maps were neither exact, nor beautiful: The Longitudes and Latitudes of Places, were very little conſidered; the latter of which can now be exactly determined, and the former may be very nearly adjuſted, ſince the Application of Teleſcopes to Aſtronomical Uſes has enabled Men to make much nicer Obſervations of the Moon's Eclipſes than could formerly be made; beſides thoſe of *Jupiter*'s Satellites, to which the Ancients were entirely Strangers. This makes our Maps wonderfully exact; which are not only the Divertiſements of the Curious, but of unſpeakable Uſe in Civil Life, at Sea eſpecially; where, by the help of Sea-Charts, Sailers know where they are, what Rocks lie near them, what Sands they muſt avoid; and can as perfectly tell which Way they muſt ſteer to any known Port of the Univerſe, as a Traveller

veller can, upon *Salisbury-Plain*, or *New-Market-Heath*, which Way he must ride to a great Town, which he knows beforehand is not far from the Edge of the Plain, or of the Heath. *Velserus* has printed some ancient Maps (*g*), that were made for the Direction of the *Roman* Quarter-Masters; and if a Man will compare them with *Sanson*'s, or *Blaeu*'s, he will see the difference; which in future Ages will certainly be vastly greater, if those Countries which are now barbarous, or undiscovered, should ever come into the Hands of a Civilized or Learned People. But I have not yet done with the *Loadstone*.

(*g*) Commonly called the *Peutingerian* Tables.

Besides these occasional Uses of the *Magnet*, its Nature, abstractedly taken, has been nicely enquired into, thereby to discover both its own Qualities, and its Relation to other Bodies that are round about it. And here, indeed, one may justly wonder, that when *Flavio Amalphi* (*h*) had discovered, that Iron touch'd with a *Magnet*, always points towards the

(*h*) To him this Discovery is attributed by *Salmuth* upon *Pancirollus*; others call him *John Goia*, of *Amalphi*; but *Gassendi*, *Animad.* pag. 364. says, it was found out by a *Frenchman*, about the Year MCC. since it is mentioned by one *Guyotus Provineus*, a *French* Poet of that Time, who calls the Compass *Marineta*; to which *Gassendi* also adds, That it was most probably a *French* Invention, because the *North-Point* is by all Nations marked in their Compasses by a *Flower-de-Luce*, the Arms of *France*.

North,

North, that all the Philoſophers of that Age did not immediately try all manner of Experiments upon that ſtrange Stone, which was found to be ſo exceedingly uſeful in Matters of common Life. The *Portuguezes*, who firſt made daring Voyages, by the Help of the Compaſs, into the Southern and South-Eaſtern Seas, better knew the Value of that rich Diſcovery: But Philoſophy was in thoſe darker Ages divided between the *School-men* and the *Chymiſts*; the former preſently ſalved the Buſineſs with their *Subſtantial Forms*, and what they could not comprehend, came very properly under the Notion of an *Occult Quality*: The latter found nothing extraordinary in their Crucibles, when they analyzed the *Magnet*; and ſo they ſeem ſoon to have given it over: Beſides, in thoſe Days, few Men ſtudied Chymiſtry with any other Deſign than that of finding out the Philoſopher's Stone, to which the Load-ſtone could do them no further ſervice than that of ſupplying them with another hard Name to Cant with (*i*). For theſe Reaſons therefore, it lay in a good meaſure neglected by Men of Letters, till our Famous Country-man, Doctor *Gilbert* of *Colcheſter*, by a vaſt number of Experiments, found that the *Earth* was but a *larger Magnet*; and he, indeed, was the

(*i*) *Magnesia Nigra*, is one of the hard Words uſed by *Eyrenæus Philalethes*: and it is ridiculed by *Surly*, in *Ben Johnſon's Alchemiſt*.

the first Author of all those Magnetical Speculations which have been made since his had the good fortune to be generally approved. This Great Man, whom *Galileo* and *Kepler* express a great Veneration for in their Writings, deserves here to be mentioned upon another Account; because He, my Lord *Bacon*, and Mr. *Harriot*, all *Englishmen*, are the Three Men to whom Monsieur *Des Cartes* was so very much obliged for the first Hints of the greatest Things, which he has given us in his Philosophical and Mathematical Discourses. For nothing does more convincingly put Things of this Nature out of doubt, than to trace them up to their first Originals, which can be done but in very few. So great have been the Advantages which have accrued to the World, only by Men's Enquiries into the Properties of one single Natural Body.

But the Knowledge of *Minerals* (strictly so called) though infinitely useful to the Life of Man, is not the only thing which may be learn'd in the Subterraneous World. The Bowels of the Earth are wonderfully Fruitful, and afford a Variety, comparatively speaking, not much regarded till these later Ages. Not only *Salts* and *Metals*, *Marble*, *Coal*, and *Amber*, may be, and are dug from thence; but the

the Inhabitants of the Earth and Sea, have made their Graves in the ſolideſt Rocks, in the profoundeſt Caverns, in Places, to one's thinking, the moſt inacceſſible, as well as the moſt unexpected, that could have been imagined. Beds of *Oyſters*, *Cockles*, and *Scallops*, have been found in the Bowels of the higheſt Hills, and the hardeſt Quarries. Groves of Trees have been taken out of the Ground, in Countries where they have never been ſeen to grow. In ſhort, by raking into the deepeſt Places of the Earth, we have ſeen that Things have once changed their Places; and without the Authority of Writings, or Ancient Tradition, we are aſſured that the Face of the World is not what it always was.

Men have yet proceeded further, and made Obſervations upon the Figures of every Stone which they found; very many of which, Antiquity, and even every other Age but this, did quite overlook. Thoſe, whoſe Luſtre and Colour made them remarkable, which are peculiarly called *Gems*, or thoſe whoſe Figure had ſomething that was ſurprizing at firſt view, were indeed taken notice of, and ſufficiently valued; but of them too, very few were then known, in compariſon of what have ſince been diſcovered. The

Ancients

Ancients *Knowledge of the Species of Stones*, and of the whole *Natural History of the Earth*, is in a manner all contained in the 33d, 34th, 35th, 36th, & 37th Books of *Pliny*'s *Natural History*; where there is so much Fabulous, that it is not easily distinguishable from what is Real: If this were compared with the Writings of *Fabius Columna* (*k*), *Agostino Scilla* (*l*), *Steno* (*m*), *Ray* (*n*), *Hooke* (*o*), *Lister* (*p*), *Woodward* (*q*), and *Plot* (*r*), what new Scenes of Knowledge would appear? What Discoveries has Signior *Scilla*, made of the *Petrifactions* (as they are vulgarly esteemed) of the Isle of *Malta* alone? The Ancients were not sufficiently aware of the Treasures which the Earth contains within it. The *Ancients*, did I say? hardly any of the *Moderns*, till within these last Thirty Years. *Gold*, indeed, and *Silver*, have, for very many Ages, been insatiably thirsted after; and the other Metals, *Tin* and *Copper*, *Iron* and *Lead*, whose Uses have long been known, have been carefully searched for. But when those

(*k*) *De Purpurâ: Dissertat. de Glossopetris.*

(*l*) *La Vana Speculazione disingannata dal Senso*, printed at *Naples*, in MDCLXX. and epitomiz'd in the *Philosoph. Transact.* numb. 219.

(*m*) *In Prodromo: & Dissertat. de Cane Carcharia & Glossopetris.*

(*n*) *Travels*, p. 113,—131. and *Three Physico-Theological Discourses*, Edit. 2.

(*o*) *Microgr.* p. 109,—112. *Lecture of Springs*, p. 48, 49, 50.

(*p*) *Philosoph. Transact.* & *de Cochlitis.*

(*q*) *Essay towards a Natural History of the Earth.*

(*r*) *Nat. Hist. of* Oxfordshire.

thoſe Six Metals, and ſome of the moſt remarkable Minerals, ſuch as *Mercury*, *Antimony*, *Vitriol*, *Nitre*, *Sulphur*, *Sal Gemmæ*, *Pit-Coal*, *Amber*, and the like, were once found, the Curioſity of Mankind was pretty much at a ſtand. Whereas, ſince ſo many Learned and Induſtrious Men have thought it worth their while to make Enquiries after the niceſt Varieties, and moſt minute Productions of their Mother Earth, they have found ſuch incredible Numbers of *formed Stones*, and *Shells as hard as Stones*, upon its Surface, and in its lowermoſt Receſſes that Men have ever dug to, that they have thereby been enabled to raiſe ſeveral Hypotheſes (*s*), which may perhaps hereafter, when Men are better acquainted with the Productions of the Subterraneous World, be a means of ſolving ſome of the greateſt Difficulties in the *Moſaical Hiſtory*.

(*s*) Vid. *Woodward's Eſſay towards the Natural Hiſtory of the Earth*, and *Whiſton's Theory of the Earth.*

I have taken notice of this, to juſtifie thoſe Gentlemen who have laboured in theſe ſort of Enquiries: Some of them who have taken the greateſt Pains, have been publickly ridiculed (*t*), as if what they had done, had tended no more to the Advancement of valuable Knowledge, than if they had gather'd Pebbles upon

(*t*) See *the Character of a Virtuoſo*, in the *Eſſay in Defence of the Female Sex.*

the Shore to throw away again, as *Caligula's* Soldiers did upon the *Batavian* Coaſt, when they ſhould have been tranſported into *Britain.* There would have been a ſtop put to the Progreſs of Learning long ago, if immediate Uſefulneſs had been the ſole Motive of Men's Enquiries. Whatſoever our Great Creator has thought fit to give a Specifical Being to, is, if acceſſible, certainly worth our ſearching after. And though we do not ſee the preſent Advantage that will accrue to Mankind by the Diſcovery of this or that particular Species of Minerals, Stones, Plants, or Inſects, yet Poſterity may; and then all the Returns for the Uſes that they can ever make of them, will be in a great meaſure due to him that found them out. He that firſt pick'd up a *Magnet*, and perceived that it would draw Iron, might then perhaps be laugh'd at, for preſerving a Child's Play-thing; and yet the Obſervation of that noble Quality, was neceſſarily previous to the ſucceeding Obſervations of its conſtant pointing towards the North, which have proved ſo unſpeakably uſeful in Civil Life. So that I think all theſe excellent Men do highly deſerve Commendation for theſe ſeemingly uſeleſs Labours, and the more, ſince they run the hazard of being laughed at by Men

Men of Wit and Satyr, who always have their End, if they make their Readers Sport, whether the thing which they expoſe, deſerves to be ridiculed or not.

But it is time to leave this Argument, when I have obſerved, that all that has yet been publiſhed concerning the *formed Stones*, *Shells* and *Petrifactions* found in and upon the Earth, will ſeem but Gleanings, in compariſon of that vaſt Collection which thoſe excellent Naturaliſts, Mr. *Edward Lhwyd* of *Oxford*, and Dr. *Woodward* have promiſed ſhortly to preſent the World withal.

CHAP. XXI.

Of Ancient and Modern Hiſtories of Plants.

THE *Natural Hiſtory of Plants* comes next; which, for Variety and Uſe, is one of the nobleſt and pleaſanteſt Parts of Knowledge. Its Mechanical and Medicinal Advantages were early known. Fruits afforded the firſt Suſtenance to Mankind; and the old Heathens eſteemed thoſe worthy of

Conſecration, who taught them to Till their Grounds, Gather their Seed, and Grind their Corn: With Trees they built themſelves Houſes; afterwards they found that the Bark of ſome Plants would ſerve for Cloaths, and others afforded Medicines againſt Wounds and Diſeaſes. There is no doubt therefore, but this Part of Knowledge was ſufficiently cultivated for the Uſes of Humane Life; eſpecially when Mankind becoming numerous, thoſe that were inquiſitive communicated their Notions together, and Converſation had introduced the Arts of Luxury and Plenty into the World. Even in *America*, where *moſt* of the Nations which the *Europæans* diſcovered were Salvage, and *all* Unlearned, the Natives knew the Oeconomical and Medical Uſes of many of their nobleſt Plants. They made Bread of their *Mayz*, and the Roots of *Tucca*, ſome ſmoaked *Tobacco*, ſome poyſoned their Arrows with the Juice of one Plant, others made their *Chocolate* with the Seeds of another, ſome cloathed themſelves with *Cotton*, others cured *Agues* with the *Cortex*, and Venereal Diſeaſes with *Guajacum*, and almoſt every other ſort of Diſeaſe to which they were incident with ſome Specific or other, which Uſe and Experience had taught them. But whether the *Natural Hiſtory*

of

of Plants was yet notwithſtanding all this, ſo exactly known formerly, as it is at preſent, is the Queſtion.

The ancienteſt Writers of *Plants* now extant, are *Theophraſtus*, *Pliny*, and *Dioſcorides*; indeed, the only ones who ſay any thing conſiderable to the preſent Purpoſe. *Theophraſtus* deſcribes little; gives abundance of Obſervations upon ſeveral Plants, and the like; but what he ſays, is rather to be taken notice of when we ſpeak of *Agriculture* and *Gardening*, than in this place. *Pliny* and *Dioſcorides*, who lived long after him, give Deſcriptions indeed of a great many Plants, but ſhort, imperfect, and without Method; they ſay, for Inſtance, that a Plant is hairy, has broad Leaves, that its Stalks are knotty, hollow, or ſquare; that its Branches creep upon the Ground, are erect, and ſo forth; in ſhort, if there is any thing remarkable in the Colour or Shape of the Stalk, Root, Seed, Flower or Fruit, which ſtrikes the Eye at firſt ſight, it may perhaps be taken notice of, but then every thing is confuſed, and ſeldom above one or two Plants of a ſort are mentioned; though ſometimes later *Botaniſts* have obſerved ſome Scores plainly reducible to the ſame general Head. *Pliny* ranges many of

the Plants, which he deſcribes in an Order (*u*) ſomething Alphabetical; others (*w*) he digeſts according to their Virtues; others (*x*) he puts together, becauſe they were diſcovered by great Perſons, and called by their Diſcoverers Names: All which Methods, how much ſoever they may aſſiſt the Memory in remembring hard Names, or in retaining the *Materia Medica* in one View in a Man's Head, ſignifie nothing to the Underſtanding the Characteriſtical Differences of the ſeveral Plants; by which alone, and not by accidental Agreements in Virtue, Smell, Colour, Taſte, Place of Growth, Time of Sprouting, or any Mechanical Uſe to which they may be made ſerviceable, Men may reaſonably expect to become exact *Botaniſts*: Without ſuch a Method, to which the Ancients were altogether Strangers, the Knowledge of Plants is a confuſed thing, depending wholly upon an uncommon Strength of Memory and Imagination, and even with the Help of the beſt Books ſcarce attainable without a Maſter, and then too not under a very long Time.

Conradus Geſner, to whoſe Labours the World has been unſpeakably beholden in almoſt

(*u*) *N. H.* l. 12. c. 13. and l. 27. throughout.

(*w*) The 12th. Book is chiefly of Plants which bear odoriferous Gums, and ſo on of all the reſt.

(*x*) *N. H.* l. 25. c. 6, 7. *& alibi paſſim.*

almoſt all Parts of Natural Hiſtory, was the firſt Man (that I know of) who hinted at the true Way to diſtinguiſh Plants, and reduce them to fixed and certain Heads. In a Letter to *Theodorus Zuingerus* (*y*), he ſays, that Plants are to be ranged according to the Shape of their Flowers, Fruits and Seeds; having obſerved that Cultivation, or any accidental Difference of Soil, never alters the Shape of theſe more Eſſential Parts; but that every Plant has ſomething there peculiar, by which it may be diſtinguiſhed, not only from others of a remoter *Genus*, but alſo from thoſe of the ſame Family.

(*y*) *Epiſt. Medicinal.* p. 113. *a.*

About the ſame time, *Andreas Cæſalpinus*, and *Fabius Columna*, the firſt eſpecially, reduced that into an Art, which *Geſner* had hinted at before. The firſt of theſe, divided the whole Body of Plants, then known, into Claſſes, from the Number and Order of their Seeds and Seed-Veſſels, and drew up a Hiſtory accordingly. But his Method was too general; and becauſe it took too little notice of the *Roots*, *Leaves*, *Stalks*, and *Perianthia* of Plants, which in ſome Tribes ought neceſſarily to be conſidered, it was long laid by as uſeleſs; though *Cluſius*, *Gaſpar Bauhinus*, *Parkinſon*, *Gerard* and

Johnſon, and *John Bauhinus*, had taken very laudable Pains, not only in deſcribing the more general Sorts taken notice of by the Ancients, but alſo in obſerving their ſeveral Sub-diviſions with great Niceneſs and Skill. *Gaſpar Bauhinus*, who ſpent Forty Years in compleating his *Pinax*, or *General Index* to all the Botanical Writers, Ancient and Modern, that had appeared before him, ranged the whole Syſtem of Plants, then known, into ſuch Claſſes as he thought propereſt. Yet tho' his Method is allow'd to have been the beſt, ſetting *Cæſalpinus*'s aſide, which had till then been made uſe of, (z) it was far from being Natural, and accordingly has never ſince been follow'd. *John Bauhinus* alſo had deſcribed every particular Plant then known, in his *General Hiſtory of Plants*, with great Accuracy; and compared whatſoever had been ſaid by former Botaniſts, and adjuſted old Names to thoſe Plants which Modern Herbariſts had gathered, with ſo much Care, that the Philological Part of *Botany* ſeems by him to have, in a manner, received its utmoſt Perfection.

(z) Vid. *Moriſon. Prælud. Botanic.* p. 403.

The great Work therefore already begun by *Cæſalpinus* and *Columna*, was ſtill imperfect; which, though perhaps not the moſt Laborious, was yet the moſt Neceſſary

Neceſſary to a Man that would conſider thoſe things Philoſophically, and comprehend the whole Vegetable Kingdom, as the Chymiſts call it, under one View. This was, to digeſt every Species of Plants under ſuch and ſuch Families and Tribes; that ſo, by the help of a general Method (taken only from the Plants themſelves, and not from any accidental Reſpects, under which they may be conſidered) once thoroughly underſtood, a Learner might not be at a loſs upon the Sight of every new Plant that he ſhould meet with, but might diſcern its general Head at firſt View; and then, by running over the Tables thereunto belonging, might, at laſt, either come to the particular Species which he ſought for, or, which would pleaſe him much better, find that the Plant before him was hitherto undeſcribed, and that by it there would be a new acceſſion made to the old Stock. Mr. *Ray* drew a rough Draught of this Matter, in the *Tables of Plants* inſerted into Biſhop *Wilkins*'s his Book, *Of a Real Character, and Philoſophical Language*; and was ſoon followed by Dr. *Moriſon*, in his *Hortus Regius Bleſenſis*, who, purſuant to his own Method, (which, indeed, is nothing elſe but *Andreas Cæſalpinus*'s a little alter'd,) begun *A General Hiſtory of Plants*; which he

he not living to finish, Mr. *Ray* undertook the whole Work anew, and very happily compleated it.

This great Performance of his, which will be a standing Monument of Modern Industry and Exactness, deserves to be more particularly described. First, therefore, He gives an Anatomical Account, from *Malpighius* and *Grew*, of Plants in general: And because the Ancients had said nothing upon that Subject, of which, for want of Microscopes, they could have but a very obscure Notion, all that he says upon that Head is Modern. Afterwards, when he comes to particular Plants, he draws up Tables, to which he reduces the whole Vegetable Kingdom, except some few irregular Plants, which stand by themselves. These Tables are taken from the Shape and Colour of the Flowers, Seeds, Seed-Vessels, Stalks, Leaves and Roots; from the Number or Order of these when determined, and Irregularity when undetermined; from the want, or having of particular Juices, Lympha's, Milks, Oils, Rosins, or the like: In short, from Differences, or Agreements, wholly arising from the Plants themselves. His Descriptions are as exact as *John Bauhine*'s every where; since he copy's him where others have not described a Plant, better than

than he; and always ſupplies, with great Nicety and Art, what was wanting in their Deſcriptions: We may be ſure therefore that here has been a gradual Improvement; for *John Bauhine*'s Deſcriptions are much better than thoſe of the generality of Botaniſts that were before him; and there are ſcarce any of theirs, which are not preferable to thoſe of *Pliny* and *Dioſcorides*: He gives the *Synonyma* of the moſt exact and beſt known Botaniſts; the want of adjuſting which carefully, had made former Compilers tedious; and by inſerting what was already extant in the *Malabar-Garden*, *Boym*'s *Flora Sinenſis*, *Marcgravius*'s *Natural Hiſtory of* Braſil, *Hernandez*'s *Account of the Plants of* Mexico, *Cornutus*'s *Hiſtory of the Plants of* Canada, and other *Indian* Accounts of Natural Rarities, into his General Hiſtory, has ſhewed, that the Moderns have been as careful to compleat the Natural Hiſtory of remoter Countries, as to underſtand the Productions of their own.

Before I quit this Work of Mr. *Ray*'s, which is but one of the many Labours that he has happily gone through to enlarge the Bounds of Natural Knowledge, I muſt obſerve what he delights ſo much to have remembred; That a conſiderable part of the Debt which Poſterity will owe to this excellent

excellent Naturaliſt, will be due to the Aſſiſtances which he has for many Years received from my moſt Learned Friend Dr. *Tancred Robinſon*, whoſe Skill in all Parts of Phyſical Knowledge have long made him capable of performing whatſoever he ſhould think fit to undertake in that ſort of Learning, and conſequently of enlarging the Bounds of our Knowledge as much as any of thoſe great Men who have been here remembred.

It may be wonder'd at, perhaps, why I ſhould mention Modern Diſcoveries of Natural Knowledge in the *Eaſt* and *Weſt-Indies*, ſince the Ancients were not to be blamed for being ignorant of Things which they had no Opportunity of knowing. But, beſides that it proves the Extent of the Knowledge of the preſent Age in Natural Hiſtory, which may be conſidered, without any regard to the Opportunities of acquiring it; it proves alſo, againſt Sir *William Temple*, that the Moderns have done what they could in every Point, to make the greateſt Uſe they were able of every Addition to their former Knowledge, which might accrue to them by the Diſcovery of the Uſefulneſs of the *Load-ſtone* in Navigation: His words are theſe; (*a*) *The vaſt Continents of* China, *the* Eaſt *and* Weſt-Indies, *the long*

(*a*) P. 49.

long Extent and Coaſts of Africa, *have been hereby introduced into our Acquaintance, and our Maps; and great Encreaſes of Wealth and Luxury, but none of Knowledge brought among us, further than the Extent and Situation of Countrey, the Cuſtoms and Manners of ſo many Original Nations.* —— *I do not doubt but many great and more noble Uſes would have been made of ſuch Conqueſts, or Diſcoveries, if they had fallen to the Share of the* Greeks *and* Romans, *in thoſe Ages, when Knowledge and Fame were in as great Requeſt as endleſs Gains and Wealth are among us now: And how much greater Diſcoveries might have been made by ſuch Spirits as theirs, is hard to gueſs.* Sir *William Temple* here owns, that the *Political* Uſes which can be made by ſuch Diſcoveries, are inconſiderable; though, at the ſame time, he confeſſes, that even thoſe have not been neglected, ſince he acknowledges that Men have brought from thoſe Barbarous Nations an Account of their *Cuſtoms and Manners*; which is the only Political Uſe, that I know of, that is to be learnt by Travel. What other Advantages might have been made, is hard to tell, unleſs ſuch as may conduce to the Compleating of Natural Hiſtory; the Benefits whereof are agreed upon, of all Hands, to be very great. The Subject

now

now before me is *Botanics*, which has been so far from being neglected, that all imaginable Care has been taken to compleat it. Monsieur *Herman* spent several Years in the *East-Indies*, and at the *Cape of Good Hope*, to bring back into *Europe* an Account of the Natural Rarities of those Countries; and his Writings since his return, shew that he did not lose his Time. Monsieur *Van Rheed*, the noble Collector of the Plants that are so magnificently printed in the Eleven Volumes of the *Hortus Malabaricus*, has added more to the Number of those formerly known, than are to be found in all the Writings of the Ancients. As much may be said of that Excellent Collection of Exotic Plants which Dr. *Plukenet* has since given us in his incomparable Tables, besides great Numbers before undescribed, of which he has set down Characteristical Marks in his *Botanical Almagest*. Nay, this ought further to be added in his Commendation; That coming after those who had newly done so great Things before him, such a Harvest where small Gleanings were rationally to be expected, is more surprizing and extraordinary. When (*b*) Prince *Maurice* of *Nassaw* was in *Brasil*, he ordered Pictures and Descriptions to be taken of all the Beasts, Birds, Fishes and

(*b*) *Mentzel.* Index Plantar. Multiling. *in Præfatione.*

and Plants that could be found in that Country: They are now in the Elector of *Brandenburgh*'s Library fit for the Press. But I must not forget Dr. *Sloane*'s *Catalogue of the Plants of* Jamaica, *and the* Caribbee Islands, a Specimen only of a larger Work, which when once it appears, will (if we had no other Arguments) effectually confute all those who imagine that *Wealth* and *Luxury* only have been the Motives of *Europæan* Voyages into the *New World*. Since I may venture to say, that there is but a very small Part of the *Old* so well known, after so long study, as those Islands, as to all their Natural Productions, will then be, through the Labour and Skill of that industrious Naturalist. And if Mr. *Banister* had lived to have compleated his Enquiries into the *Natural History* of *Virginia*, we should have had another Instance of our own Nation, how very Laborious and Careful the Men of these later Ages have been to leave no part of accessible Knowledge uncultivated. Every Day New Additions are made to this Part of Natural History. *Breynius*'s, *Plumier*'s, and *Herman*'s Collections, are Modern to those of *Bellonius*, *Clusius*, *Rauwolfius*, and *Prosper Alpinus*; as theirs are to those of *Pliny* and *Dioscorides*. One is also to consider, that this is a much more

more laborious Buſineſs, than the Knowledge of Fowls, Fiſhes, and Quadrupeds. The Confuſion in which the Ancients left *Botanical Knowledge*, ſhews how little they underſtood it. And, which is ſtill more remarkable, it is not only in Accounts of Plants peculiar to the *Indies*, or to *China*, that our *Botanical Knowledge* excels theirs, but in the Productions of Countries, equally acceſſible to them, as to us. There are no new Species in *Europe* or *Aſia*, which the Ancient Herbariſts could not have diſcovered; no new Soils to produce them without Seed, in caſe ſuch a thing were ever naturally poſſible. Let but a Man compare Mr. *Ray*'s *Catalogue of Engliſh Plants*, and thoſe other numerous Catalogues of the Plants of other Countries, drawn up by other Modern Botaniſts, with the Writings of *Pliny* and *Dioſcorides*; let him examine *Ray*'s *General Hiſtory*, or, if that be not at hand, *Gerard*'s, *Parkinſon*'s, or *John Bauhine*'s *Herbals*, or *Gaſpar Bauhine*'s *Pinax*; and deduct every Plant, not growing wild, within the Limits of the *Roman* Empire, and he will ſee enough to convince him, that not only this Part of Knowledge is incomparably more exact and large than it was formerly, but alſo, by comparing the Writings of the firſt Reſtorers of the Know-

Knowledge of Simples, *Matthiolus*, *Dodonæus*, *Fuchsius*, *Turner*, and the rest, with the Writings of *Plukenet*, *Ray* and *Morison*, that it has been always growing, and will do so still, till the Subject be exhausted.

It is well known, that Travelling in *Mahometan* Countries is extremely dangerous; that it is what no Man that makes Learning his Aim in Journeying, would willingly undertake, if he were not ardently possessed with the Love of it. So that whatsoever Perils the *Ancient Sages* endured in their Journeys into *Ægypt* for Knowledge, they are equalled at least, if not out-done by our *Modern Sages*; to use that word, in Sir *William Temple*'s sence, for one that goes far and near to seek for Knowledge. Nay, I may safely add, that a few inquisitive and learned Travellers, such as *Rauwolfius*, *Prosper Alpinus*, *Bellonius*, *Guillandinus*, and Sir *George Wheler*, have acquainted the learned Men of these Parts of the World with the Natural History of the Countries of the *Levant*, not only better than they could have known it by reading the Books of the Ancients, but, in many Particulars, better than the Ancients themselves, Natives of those very Countries, knew it, if the extant Books can enable us to give a

competent Judgment in this Matter. And if Travelling far for Knowledge, be sufficient to recommend the Ancients to our Imitation, I may observe, that Mr. *Edmond Halley*, who went to St. *Helena*, an Island situate in the XVI^th. Degree of Southern Latitude, to take an Account of the Fixed Stars in the Southern Hemisphere, which are never visible to us who live in the Northern; and to *Dantzick*, to conferr about Astronomical Matters, with the great *Hevelius*, has taken much larger Journeys than any of the Ancients ever did in the sole Pursuit of Knowledge.

CHAP. XXII.

Of Ancient and Modern Agriculture and Gardening.

THE *Ancients* put so great a Value upon the Country-man's Arts, and we have so many Treatises still extant concerning them, written by their greatest Philosophers, their ablest Philologers, and their best Poets, that to say nothing of them, may be thought an inexcusable Omission.

Omiſſion. *Husbandry* and *Gardening* are Subjects upon which *Theophraſtus* (*Ariſtotle*'s Darling Diſciple,) *Varro* (who is ſaid to be the learnedeſt of all the *Romans*,) and *Pliny* (perhaps no-way his inferior) have written large Diſcourſes yet remaining. *Varro* and *Pliny* quote numbers of Authors, ſome of them no leſs than Crowned Heads, ſince loſt. *Heſiod*, whom ſome of the Ancients make older than *Homer*, and *Virgil* the Prince of *Roman* Poets, have left us Precepts of theſe Arts. *Columella* ſays, they are related to Philoſophy it ſelf, which thoſe Heathen Sages priz'd ſo highly: And the later *Roman* Writers are ſtill upbraiding the Luxury of their own Times, which wholly took off their Minds from theſe moſt uſeful Employments, and ſending their effeminate Country-men back to their renowned Anceſtors who went from the Plough to the Camp, and having there commanded victorious Armies, returned back again to the Plough, to redeem the Time they had loſt.

There is no doubt but great Things were done in theſe Arts by the Ancients: Had we no Books extant to acquaint us with their Knowledge, yet the thing ſhews it ſelf: Countries cannot be peopled by Civilized Nations, nor great Cities filled,

nor Trade carried on by polite and induſtrious Inhabitants, unleſs the Arts of Husbandry flouriſh. Mankind, without them, would be Wild, like the *Negroes*, and *American* Salvages, or *Arabs*. But yet one Nation may be much more Knowing in theſe Things than another, and one Age conſequently, though all may have Skill enough to anſwer the Neceſſities of Civil Life.

In making my Compariſon, I ſhall comprehend all that the Ancients underſtood by their *Res Ruſtica*, as it takes in the *Foreſter's*, the *Husbandman's*, and the *Gardener's* Buſineſs: *Cato*, *Varro* and *Columella* include the *Graſier's* alſo, thereby compleating the whole Body of *Farming*; but ſince *his* Work cannot well be made a Science of, I ſhall omit it.

By a *Foreſter* here, I underſtand one that knows how to Plant, Propagate and Encreaſe all ſorts of Timber Trees; what Soils are proper for every ſort; how they may beſt be defended from Dangers in their Growth; to what Uſes they are moſt applicable, when they have arrived to their utmoſt Perfection; and how they may be beſt applied: Such a Man, in ſhort, as Mr. *Evelyn* inſtructs in his *Silva*, where he gives a full Syſtem of the *Wood-man's* Skill, what he ought to know,

know, and what to practiſe. A great part of his Work, and indeed the Niceſt part of it, the Ancients were Strangers to, as having leſs Occaſion for it. The World was then, comparatively ſpeaking, in its Infancy; there was no want of Wood, for Fuel, Building, or Ships; and this Plenty made Men leſs curious in Contriving Methods of Preſerving what they had in ſo great Abundance. *England*, till within a few Ages, was every where overrun with Wood: The *Hercynian* Foreſt anciently took up what is now the moſt flouriſhing Part of *Germany*: And *France*, which is at preſent ſo wonderfully Populous, that little Cultivable Ground remains Untill'd, was in *Cæſar*'s time overſpread with Woods and Foreſts. As Men encreaſe, Tillage becomes more and more requiſite; the conſumption of Wood will be proportionably greater; and its want, and the neceſſary Uſes of Timber, which grow upon Men as they become more numerous, will of conſequence put them upon Ways to preſerve and encreaſe it. Commerce with diſtant Parts, will ſhew Men rare and uſeful Trees, to which their own Soil was before a ſtranger; and Luxury will ſoon teach them to tranſplant them.

No wonder therefore if Modern Writers excel the Ancients, upon a Subject which they had leſs Occaſion for. The *Romans*, indeed, were Curious in Planting Trees for Shade or Fruit; but their Induſtry in that Particular comes under another Head, as rather belonging to the *Gardener*'s Work. It may therefore, perhaps, be eſteemed a ſmall Character of Mr. *Evelyn*'s *Diſcourſe of Foreſt Trees*, to ſay, that it Out-does all that *Theophraſtus* and *Pliny* have left us on that Subject: For it not only does that, and a great deal more, but contains more uſeful Precepts, Hints and Diſcoveries upon that now ſo neceſſary a part of our *Res Ruſtica*, than the World had till then known from all the Obſervations of former Ages. To name others after him, would be a Derogation to his Performance.

Agriculture properly ſo called, has been always neceſſary ſince *Noah*'s time, when the Flood, that *deſtroy'd the World of the Ungodly*, wrought ſuch a Change upon the Face of the Earth, as made it neceſſary for all Mankind *in the ſweat of their brows to eat their bread.* And the early Populouſneſs of the Eaſtern Nations, (though I would not bring *Semiramis* and *Zoroaſter*'s Armies to prove it) ſhews how much it was followed. For though thoſe Countries

tries ſhould be allowed to be, as they really are, marvellouſly Fruitful; yet even *Ægypt*, and the Plains of *Babylonia*, muſt be Tilled, to yield a Crop to ſatisfie the Hunger of their Inhabitants. Weſtward, as the World was later Peopled, ſo Tillage was proportionably later; and the *Athenians* tell of one *Triptolemus*, who learn'd the Art of Sowing Corn of the *Ægyptians*, above M Years after *Noah*'s Flood (*c*). After that, Neceſſity taught them many Rules; and it is evident from *Theophraſtus*, and the *Roman* Writers of *Geoponic's*, that their Knowledge in this kind was very great. They were thoroughly verſed in the Art of Dreſſing their Grounds, and the Seaſons when it was proper to do every part of a Husbandman's Work; what Compoſt was fit to meliorate their over-wrought or barren Lands; what Soil was beſt for this Grain, and what for that. Their Vines and Olives, which were their Farmer's Care, were managed with much Skill and Curioſity; and *Pliny* reckons up a great many ſorts of both of them, which the Luxury of that Age had taught them to Cultivate. In a word; They were Induſtrious, and Skilful Husbandmen; and perhaps, 'tis not poſſible to tell, at this diſtance, whether our Farmers manage their Grounds more judiciouſly

(*c*) Vid. *Marſhami Chronicon.* pag. 249. Edit. *Lond.*

than they did theirs: Since any Improvements particular to one Climate and Soil, do not prove that Age in which they are made, more Knowing than another, wherein ſuch Improvements could take no place: Though at the ſame time, a Country naturally barren, which has a weak Sun in an unkindly Climate, requires more Skill, as well as more Induſtry, to make it Fertile. And therefore it may be queſtion'd, whether, conſidering the Natural Felicity of the Soils of *Sicily*, *Africa* and *Greece*, and much more of *Ægypt*, *Judæa* and *Babylonia*, whoſe Fertility was anciently, with Reaſon, ſo much extolled, the Improvements in *England*, *Scotland* and *Holland* may not juſtly come into Competition with any ancient Performances, which how great ſoever in themſelves, were yet leſs upon this Account, that the Husbandmen in thoſe Regions had not ſuch Difficulties to ſtruggle with.

But though the Ancients, probably, underſtood the Art of Sowing Wheat, and Barly, and Legumes, and Flax, and how to Manage their Vines and Olives, as well as any Age has done ſince; yet other Things of unſpeakable Uſe they were wholly Strangers to. The Art of Making *Cydar*, at leaſt of Chuſing the beſt Apples, and Managing their Orchards

and

and Plantations accordingly, they knew little or nothing of. And here again I muſt remember to take notice, (which, upon every Opportunity, I gladly do,) that Mr. *Evelyn*'s *Pomona* has taught the preſent Age many things concerning the way of Ordering Apple-Trees, and Making *Cydar*, to which the World, till then, were wholly Strangers, and for which he ought here to be mentioned with Honour. The *Sugar-Cane* was not anciently unknown, ſince it grows naturally in *Arabia* and *Indoſtan*; but ſo little was the Old World acquainted with the Nature of its delicious Juice, that ſome of their ableſt Men doubted whether it were a Dew like Manna, or the Juice of the Plant it ſelf. All the Arts and Methods therefore of Preparing *Sugar*, which have made it ſo very Uſeful to Humane Life, are owing to Modern *Portuguezes* and *Engliſh*. *Malt Drinks* were uſed in *Gaul* and *Spain* anciently, as alſo in *Ægypt*, where, probably, they were firſt invented; but whether they were ſo accurately made as ours, no Man can tell, unleſs he knew certainly whether and with what they fermented them. May I not farther inſtance in *Coffee* and *Tobacco*? The *Romans* drove a greater Trade in *Arabia*, and were better acquainted with its Commodities, than this Part of the World

World has been at any time since, which no Man that has ever read the XIII^th. Book of *Pliny*'s *Natural History* can possibly doubt of; yet there is no one Syllable of any thing like *Coffee* in his whole Work, nor indeed in any other Ancient Author before the *Arabs*. It is very probable that it grows wild in *Arabia*, since it is known to grow no where else; and that the Prohibition of Wine by the *Mahometan* Law, made the *Arabs* find out its Virtues, (whereas before it was a neglected Shrub) to supply the place of the other Liquor. But still its Cultivation is, as to the present Question, Modern; and since the *Arabs* do now bestow great Care and Pains in Managing it, it comes not improperly in among the Augmentations of *Modern Agriculture*. And that *Tobacco* ought here to be mentioned, is question'd by none who know what a Delight and Refreshment it is to so many Nations, so many several Ways. The Accounts of *Virginia* and *Brasil* will inform us what Pains our *Europæan* Planters are at, to make that Herb Palatable to all sorts of Persons. So that without taking notice of any more Particulars, we may be assured, that the *Modern Husbandry* is a *larger*, if not a more *exact* thing than the *Ancient*; and even in those things wherein

wherein the Ancients did moſt excell, in the Management of their Vines and Olives, the comparative Excellency of the later Ages will perhaps be allowed by all thoſe who are acquainted with the Curioſity of the preſent, in Managing of their Fruit-Trees; which ſhall be treated of in its proper Place.

I deferred to ſpeak of *Gardening* till the laſt; becauſe Luxury always comes after Neceſſity, though, generally, when it is once introduced, it ſtill goes on encreaſing, till it is come to the utmoſt pitch to which it can be carried. In the preſent Subject, we ſhall find a gradual Improvement ſo very viſible, that I hope to put it paſt Controverſie.

The Babylonian *Horti Penſiles*, or Gardens on the tops of Buildings, ought, in moſt Men's Opinion, firſt to be mentioned in point of Antiquity: Theſe, *Joſephus* aſſures us, were only large Walks of Trees planted on the tops of Mounts of Maſons Work, erected in the midſt of the City by *Nebuchadnezzar*, to pleaſe his Wife. If they are no older, *Alcinous*'s Garden, deſcribed by *Homer* (*d*), was long before them. There one ſees the Simplicity of that Heroical Age very plainly. The Poet thought he did a magnificent Thing, when he made it Four

(*d*) *Odyſſ.* lib. viii.

Acres

Acres in Circumference: He tells us, it was ſtored with Pear-Trees and Apple-Trees, Pomegranates and Figs, Vines and Olives, which furniſhed him with conſtant ſucceſſions of Fruit; and had two Fountains, one cut into Streams, to water it within, the other flowing from thence, to ſupply the Neceſſities of the Inhabitants of the Town. And this is all he ſays of it: Poets and Romancers deſcribe every thing for their Hero's Uſes, as ſplendidly as they can, what they have ſeen, read, or heard of, is always brought in, as 'tis expected it ſhould. Accordingly the Garden deſcribed by *Euſtathius* (*e*), in the later times of the *Græcian* Empire, when Luxury was improved into an Art, which it was far from being in old *Homer*'s time, is much finer, though far ſhort of the Gardens and *Villa's* of the Princes and Great Men of the preſent Age. *Euſtathius*'s Garden has open and arched Walks of Lawrel, Cypreſs and Myrtle, with Arbors of Vines for the Conveniencies of the Gueſts, to gather the Grapes as they lay at their Meals by the Fountain-ſide; with a *Jet d'eau* in the middle of it, ſpouting Water out of an Eagle's Bill; by which a She-Goat was milked, with the Liquor dropping out of the Nipples into a Pail on purpoſe: round the Fountain are Swallows

(*e*) *Amorum Tſiminia & Tſimines*, l. i.

lows and Peacocks, Doves and Cocks, all either Caſt or Carved, out of whoſe Bills the Water flowing, gave a Sound to the ſeveral Birds. This indeed is very Pleaſant and Poetical, and ſhews, that *Euſtathius* had ſeen or heard of ſomething of this nature, by which he guided his Fancy.

What the *Roman* Gardens were, we are ſufficiently taught by their Writers *of Countrey Affairs:* (*f*) *Columella*'s and (*g*) *Pliny*'s Precepts and Deſcriptions are fit for nothing elſe but a Kitchin-Garden: They give Directions for Ordering Cucumbers, Melons, Artichokes, Coleworts, Turneps, Radiſhes, Parſnips, Skirrets, Garlick, Leeks, Onions, Aſparagus, and a numerous train of Pot-Herbs, with a little Garden-Phyſic. They both aſſign this as the Reaſon why *Virgil* would ſay nothing of Gardening, in his *Georgic's*, it being a Subject ſo very poor and jejune, that it would not bear the Ornaments which that Divine Poet gave to all his Works: So they ſeem to underſtand his *Spatia iniqua* which he complains of, upon which account he left off where he did.

(*f*) Lib. x. *tot.* & lib. xi. cap. 3.
(*g*) Lib. xix.

For if we fanſie that the Gardens of *Lucullus*, *Pompey*, *Cicero*, *Mecœnas*, *Seneca*, and of all thoſe Great *Romans* which are ſo highly extolled by the Ancients, were what we ordinarily call Gardens, we are very much miſtaken: Their Gardens were

ſpacious

ſpacious Plats of Ground, filled and ſurrounded with ſtately Walks of Platan's, and other ſhady Trees, built round with Xyſti, Portico's, finely paved with curiouſly coloured, and far-fetch'd Marble, lay'd in Artificial Figures, noble Ranges of Pillars, adorned within with Fiſh-Ponds, Aviaries, Fountains and Statues. Such ſtill are the Villa's of the *Italian* Princes at *Fraſcati*, *Tivoli*, and their other delicious Seats in *Latium* and *Campania*, ſo celebrated of old, for being the Gardens of the *Europæan* World. Such, in ſome meaſure, are the famous Gardens about *Iſpahan*, where Shade and Coolneſs give them their greateſt Pleaſure, in a Region where the Soil naturally furniſhes its Inhabitants with excellent Fruit, and fragrant Flowers; ſo that they are at little Pains to cultivate that which they can have without, and which would not afford half that Delight in their Gardens of Pleaſure, that they find in lying, in the cool of the Day, under a ſhady *Plane*, by a Fountain-ſide. This made the Ancients, who all lived in warm Climates, admire the *Plane* ſo exceedingly, that frantic Stories are told of *Xerxes*'s doting upon one in the *Leſſer Aſia*, when he was bringing down his mighty Armies againſt *Greece* (*h*). The Walks of *Academus*,

(*h*) *Ælian. Var. Hiſt.* 2. 14.

demus, and the Gardens of *Epicurus*, were of this ſort, Cool and Delicious, but which can give us no Idea of the Artificial Beauties of Modern Gardens. For the Queſtion is not, which is in it ſelf pleaſanter, or whether if we lived in *Greece* or *Perſia*, we ſhould not rather chuſe to imitate the Faſhion of thoſe Countries; but, which ſhews the greateſt Skill of him that makes it.

The Gardens of this Age are of ſeveral ſorts, *for the Kitchin*, *for Flowers*, *for Greens*, and *Shady Walks*, *for Fruit-Trees*, and *for the Apothecary*.

To the Firſt of theſe, the Induſtry of the Ancients (as we have ſeen already) was in a manner wholly confined. That they knew how to Manage thoſe Kitchin Stores which their Gardens yielded, is unqueſtionable; but their Variety was not near ſo great, ſince neither was the New World known, nor the Old ſo well examined as it has been ſince. Beſides, they knew little of the Art of Raiſing Summer Plants, in the ſevereſt Froſts, and ſo making all Seaſons of the Year unite in one, at Great Men's Tables; the bringing which to the preſent Perfection, is due to the Induſtry and Sagacity of the Age we live in; which how much it has enlarged this part of Gardening from what

what it was anciently, every Man by himſelf will eaſily imagine. The *Romans*, indeed, had a Way of Preſerving Melons in Winter, by Sowing them in a large Box fill'd with rich Mold and Dung, which they houſed in Winter, and expoſed in Sun-ſhiny Days under their *Specularia*, that ſeem to have been of the Nature of our Glaſſes; by which Contrivance, *Tiberius* the Emperor had Melons all the Year round. That ſhews what Neceſſity might have forced them to, had they been put to it.

As for *Flower Gardens*, the Ancients minded them not. They require an open Sun, and a free Air, which in hot Countries would have been Nuiſances, rather than Delights. Plants remarkable for their Beauty, or their Smell, had a Place, indeed, in their Plantations; but we find no mention of any great Variety of Species, or Art in Ranging or Managing thoſe they had. There is nothing ſaid in any *Greek* or *Roman* Authors of large Gravel-Walks, ſurrounding ſpacious Graſs-Plats, edged with beautiful Borders, fill'd with all that Choice of Auricula's, Tulipa's, Carnations, Tuberoſes, Jonquilles, Lily's, Hyacinths, Narciſſus's, and that almoſt infinite Diverſity of Beautiful and Odoriferous Flowers that now adorn our

Gardens.

Gardens. They knew not the Art of Diversifying the Colours, Enlarging the Flowers, and giving them all those sickly or luxuriant Beauties which are so commonly to be met with in our Gardens. Some Notion they had of Managing *Dwarf-Trees*, and Clipping other Trees that would bear it into what Form the Gardeners please; but they speak so little of it, that we have no reason to think they understood much of that beautiful Furniture which *Dwarfs* and *Ever-greens* afford us.

The Usefulness of *Fruit-Trees* made them be anciently more regarded. The Vines and Olives of the Ancient *Greeks* and *Romans* we have mentioned already. They had several sorts of Apples, Pears, Quinces, Peaches, Pomegranates, Plums, Figs and Nuts: As for Oranges and Limons, and the delicious Fruits of the *East* and *West-Indies*, they were wholly Strangers to them. And they had not near the Variety of those they knew, with which Monsieur *de la Quintinie*, were they now alive, could furnish them. Though they had many Precepts concerning Pruning, Setting, Graffing and Inoculating, knew their Usefulness, and could perform all those Operations with Success; yet, comparatively speaking, their Manner was course; and had their Climates been as

unkindly, their Succeſs would have been but indifferent. They could Manage Earth, and Air, and Water, pretty tolerably; but how to bring the Sun under Rules, (if I may uſe ſo bold an Expreſſion) they knew not; which yet, by their Wall-Plantations, our Gardeners do every Day. That is an Invention the Ancients were entirely unacquainted with; thereby, in Cold Countries, we can command the Warmth of *Italy* and *Spain*, and have Fruits of a Bigneſs, and Colour, and Taſte, which even at Home they can ſcarce reach.

It will not be hard now, with due Allowances, to make a juſt Compariſon between *Ancient* and *Modern Horticulture*. Monſieur *de la Quintinie* will give us a full and juſt Idea of what the Skill of this Age can reach to: Mr. *Evelyn*'s *Kalendarium Hortenſe* ought to be joined with it, to ſhew the Difference in a more Northern Clime. What Variety our Floriſts can pretend to, will appear from *Parkinſon*'s *Paradiſe*, *Ferrarius*'s *Flora*, or *Sweertius*'s *Florilegium*. In thoſe Books one may ſee what Art can do, to beautifie and enlarge Flowers beyond what Nature ordinarily produces. Other Men can only *follow* Nature; the Gardener alone *leads* it, and haſtens or ſlackens its pace

pace according as ſuits beſt with his Deſigns or Inclinations.

I need ſay nothing of the *Phyſic-Garden*, ſince what has been ſaid already in the fore-going Chapter enables every Man to judge there aright. So much for *the Knowledge of Things not endued with Senſible Life.*

CHAP. XXIII.

Of Ancient and Modern Hiſtories of Animals.

Inſects ſeem to be the loweſt and ſimpleſt Order of Animals; for which Reaſon I ſhall begin with them. That ſome are very beneficial to Man, affording him Food and Rayment; as, the *Bee*, and the *Silk-Worm*: And others, again, exceedingly troubleſom; as, *Waſps*, *Hornets*, *Gnats*, *Moths*, and abundance more; was formerly as well known as now. In their Obſervations about *Bees*, the Ancients were very curious. *Pliny* (*i*) mentions one *Ariſtomachus*, who ſpent LVIII Years in Obſerving them: And it is evident from Him, *Ariſtotle* and *Ælian*, that, as far as they could make their Obſerva-

(*i*) *N. H.* l. 11. c. 9.

tions, the Ancients did not neglect to digeſt neceſſary Materials for the Natural Hiſtory of this wonderful and uſeful Inſect. They were ſo particularly careful to collect what they could gather concerning it, that it is to be feared, a great part of what they ſay, is fabulous.

But if they were curious to collect Materials for the Hiſtory of this ſingle Inſect, they were, in the main, as negligent about the reſt. They had, indeed, Names for the general Sorts of moſt of them; and they took notice of ſome, though but few, remarkable Sub-diviſions. The Extent of their Knowledge, in this Particular, has been nicely ſhewn by *Aldrovandus* and *Mouſet*. In their Writings one may ſee, that the Ancients knew nothing of many Sorts; and of thoſe which they mention, they give but indifferent Deſcriptions; contenting themſelves with ſuch Accounts as might, perhaps, refreſh the Memories of thoſe who knew them before, though they could ſignifie little to Perſons who had never ſeen them. But of their Generation or Anatomy they could know nothing conſiderable, ſince thoſe things are, in a great meaſure, owing to Obſervations made by Microſcopes; and having obſerved few Sub-diviſions, they could ſay little to the Ranging of thoſe

thoſe Inſects which they knew already by diſtinct Characteriſtics, under ſeveral Heads. For want of obſerving the ſeveral Steps of Nature in all their Mutations, and taking notice of the Sagacity of many ſorts of Inſects, in providing convenient Lodgings for themſelves, and fit Harbours for their young ones, both for Shelter and Food, they often took thoſe to be different, which were only the ſame Species at different Seaſons; and thoſe to be near of Kin, which Chance only, not an Identity of Nature, brought together.

The Clearing of all theſe Things is owing to Modern Induſtry, ſince the Time that Sir *William Temple* has ſet as a Period of the Advancement of Modern Knowledge; even within theſe laſt XL Years. It lies, for the moſt part, in a few Hands, and ſo is the more eaſily traced. In *Italy*, *Malpighius* and *Redi* took ſeveral Parts. *Redi* (*k*) examined abundance of general Sorts, thoſe Inſects eſpecially which are believed to be produced from the Putrefaction of Fleſh; thoſe he found to grow from Eggs laid by other grown Inſects of the ſame Kinds: But he could not trace the Origination of thoſe which are found upon Leaves, Branches, Flowers, and Roots of Trees. The Generation of thoſe was nicely examined by *Malpighius*, in

(*k*) *Experimenta circà Generationem Inſectorum.*

his curious Diſcourſe of *Galls*, which is in the II^d. Part of his *Anatomy of Plants*; wherein he has ſufficiently ſhewn, that thoſe Excreſcencies and Swellings which appear in Summer-time upon the Leaves, tender Twigs, Fruits and Roots of many Trees, Shrubs and Herbs, from whence ſeveral ſorts of Inſects ſpring, are all cauſed by Eggs laid there by full-grown Inſects of their own Kinds; for which Nature has kindly provided that ſecure Harbour, till they are able to come forth, and take care of themſelves. But *Redi* has gone further yet, and has made many Obſervations upon Inſects that live, and are carried about on the Bodies of other Inſects. His Obſervations have not been weakened by Monſieur *Leeuwenhoek*, whoſe Glaſſes, which are ſaid to excell any ever yet uſed by other People, ſhewed him the ſame Animals that Monſieur *Redi* had diſcovered already; and innumerable ſorts of others, never yet thought of.

Beſides Monſieur *Leeuwenhoek*, there have been Two Men in *Holland* very eminent for this Buſineſs, *Goedartius* and *Swammerdam*. *Goedartius*, who was no Philoſopher, but one who, for his Diverſion, took great Delight in Painting all ſorts of Inſects, has given exact Hiſtories of the ſeveral Changes of great Numbers of Caterpil-

Caterpillars into Butter-Flies, and Worms or Maggots into Flies; which had never before been taken notice of, as Specifically different. These Changes had long ago been observed in Caterpillars and Maggots, by *Aristotle*, *Theophrastus* and *Pliny*: But they, who acquaint us with the greatest part of what has been done in this Matter by the Ancients, content themselves with general Things. They enter not into minute Enquiries about the several Species of these Animals, which are exceedingly numerous: They do not state the Times of their several Changes. So that these Matters being left untouch'd, we have an admirable Specimen of the Modern Advancement of Knowledge, in *Goedartius*'s Papers (*l*).

(*l*) *De Insectis*, Edit. *Lister.*

Still an Anatomical Solution of these Appearances was wholly unknown. What *Ovid* (*m*) says of the Metamorphoses of Insects, is suitable enough to the Design of his Poem: And there we may well allow such a Natural Change of Caterpillars into Butter-Flies, as is not to be accounted for by the Regular Laws of the Growth and Augmentation of Natural Bodies. But a Natural Historian has no need of the Fictions of a Poet. These Difficulties therefore were cleared by *Swammerdam* (*n*), who in his *General History*

(*m*) *Metam.* l. 15.

(*n*) *Hist. General. Insect.*

History of Insects, proves, that all the Parts of the full-grown Insect, which first appears in a different Form from what it assumes afterwards, were actually existent in the *Fœtus*, which creeps about as a Caterpillar, or a Maggot, till the Wings, Horns and Feet, which are incloſed in fine Membranes, come to their full Growth; at which time, that Membrane which at firſt was only viſible, dries up, and breaks; out of which comes forth the Inſect proper to that Kind; which then gendring with its like, lays ſuch Eggs as in a ſeaſonable Time are hatched; that ſo the Species, which is not generated by Chance, may always be preſerved.

In *England*, Dr. *Liſter* has done the moſt, to compleat this Part of Natural Hiſtory. His Book *of Spiders*, gives an Account of great Numbers of Species of thoſe Animals, formerly unobſerved. His *Latin and Engliſh Editions of* Goedartius, have not only made that Author more intelligible, by ranging his confuſed Obſervations under certain Heads conformable to Nature, which may ſerve alſo as Foundations to enlarge upon, as more Species ſhall hereafter be diſcovered, but he has taken that Occaſion of ſaying many new Things, pertinent to that Subject, all tending to encreaſe our Knowledge of thoſe

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ſmall Productions of the Divine Mechanics. His Tables *of Shells*, exhibit to the Eye a ſurprizing Variety of thoſe Inhabitants of the Waters, of which, comparatively ſpeaking, the World before had no Idea. *Buonanni* publiſh'd a beautiful Collection of them ſome Years before, at *Rome*, which when compared with thoſe mentioned in Ancient Books, does as far exceed them, as it ſelf is exceeded by Dr. *Liſter's*. And his Anatomical Diſcourſes *of Teſtaceous Animals*, lately printed, have diſcovered ſeveral curious Things in that wonderful Tribe; ſome of which, though obſerved above $\overline{\text{XXX}}$ Years ago by Mr. *Ray*, yet had not been much believed, becauſe not ſufficiently illuſtrated by an able Anatomiſt.

This is what our Age has ſeen; and it is not the leſs admirable, becauſe all of it, perhaps, cannot be made immediately uſeful to Humane Life: It is an excellent Argument to prove, That it is not Gain alone which biaſſes the Purſuits of the Men of this Age after Knowledge; for here are numerous Inſtances of Learned Men, who finding other Parts of Natural Learning taken up by Men, who, in all probability would leave little for After-comers, have, rather than not contribute their Proportion towards the Advance-

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ment of Knowledge, ſpent a World of Time, Pains and Coſt, in examining the Excreſcencies of all the Parts of Trees, Shrubs and Herbs, in obſerving the critical Times of the Changes of all ſorts of Caterpillars and Maggots, in finding out, by the Knife and Microſcopes, the minuteſt Parts of the ſmalleſt Animals, examining every Crevice, and poring in every Ditch, in tracing every Inſect up to its Original Egg; and all this with as great Diligence, as if they had had an *Alexander* to have given them as many Talents, as he is ſaid to have given to his Maſter *Ariſtotle*.

I ſhall put *Fiſhes*, *Fowls* and *Quadrupeds* together; becauſe the Queſtion, as it relates to the Natural Hiſtory of theſe Animals, may be brought into a ſmall Compaſs. For as to the Anatomical part, it is certain, That every Inſtance of the Defect of Ancient Anatomy already mentioned, is a Proof how little the Texture of the Inward Parts of all theſe Creatures could poſſibly be known, and conſequently, that no old Deſcriptions of theſe Animals which ſhould go beyond the Parts immediately viſible, could have been conſiderable. There is hardly one eminent Modern Diſcovery in Anatomy, which was not firſt found in Brutes, and afterwards

wards examined in Humane Bodies. Many of them could never have been known without the Help of Live-Diſſections; and the reſt required abundance of Trials upon great Numbers of different ſorts of Beaſts, ſome appearing plainer in one ſort of Animals, and ſome in another, before the Diſcoverers themſelves could frame ſuch a clear Idea of the Things which they were then in purſuit of, as that they could readily look for them in Humane Bodies, which could not be procured in ſo great Plenty, and of which they had not always the Convenience. All which things extremely tended to the Perfecting the Anatomy of all ſorts of Brutes. About the other Part, which may comprehend an Account of their Way of Living, their Uſes to Humane Life, their Sagacity, and the like, the Ancients took much Pains, and went very far: And there are a great many admirable things in *Ariſtotle's Hiſtory of Animals*, concerning all theſe Matters. What Helps he had from Writers that lived before his own time, we know not; if he had but little, it muſt be ownedthat his Book is one of the greateſt Inſtances of Induſtry and Sagacity that perhaps has ever been given. But ſince the Queſtion is not ſo much, whether that is an excellent Book, as, whether it is perfect; it ought

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to be compared with Mr. *Willughby*'s *Hiſtories of Fiſhes and Birds*, and Mr. *Ray*'s *Synopſis of Quadrupeds*, as the perfecteſt Modern Books upon theſe Matters; and then it will be eaſie to make a Judgment. I ſhall not make it my ſelf; becauſe no Man can miſtake, that compares them, though never ſo negligently, together. I name only *Ariſtotle*; becauſe he is, to us at leaſt, an Original Author: He had examined abundance of things himſelf; and though he took a great deal upon truſt, yet that could not be avoided, ſince he had ſo little, that we know of, from more remote Antiquity, and it was too vaſt a Work for any one ſingle Man to go through with by himſelf. *Ælian* and *Pliny* ſeem only to have Copied; and, with ſubmiſſion be it ſpoken, their Writings are *Rhapſodies* of Stories and Relations partly true, and partly fabulous, which themſelves, very often, had not Skill enough to ſeparate one from the other, rather than *Natural Hiſtories*: From which Accuſation, even *Ariſtotle* himſelf cannot wholly be excuſed. Though this muſt be ſaid in Vindication of *Pliny*, That he neither Believed himſelf, nor propoſed, as Credible, abundance of thoſe ſtrange things which he related in his *Natural Hiſtory*. His Deſign was, to ſet down what-

whatſoever he had found in all his Reading, which was very diffuſe, upon thoſe Heads which he treated of: And accordingly, where-ever he met with a ſhocking Story, he told it, indeed, (as *Geſner* and *Aldrovandus* did afterwards, though they were infinitely better Naturaliſts than he,) but it was in ſuch a manner, many times, that a Reader muſt be exceedingly careleſs that is impoſed upon either to believe the thing himſelf, or to think that *Pliny* believed it, and ſet it down for Credible. Which is a great deal more than, I think, can be ſaid for *Ælian*, whoſe Authority is not near ſo good as his *Greek*, for the Elegancy of which he was extremely valued, and the more, becauſe being by Birth a *Roman*, he had never (*o*) in his Life been out of *Italy*. But it is time to return.

(*o*) Vid. *Philoſtrat. de Vitis Sophiſt.* in *Ælian.*

If we would make this Compariſon the eaſier, we ſhould conſult *Geſner* and *Aldrovandus*; or, if they are too voluminous, *Wotton De Differentiis Animalium*, who has put under one View, in ſeveral Heads, almoſt every thing that is to be found in any ancient Authors concerning theſe Things. What he has collected of the Elephant, may be compared with Doctor *Moulin*'s Anatomy of the ſame Creature: The Ancients Obſervation concerning Vipers, may be read along with *Redi*'s and

and *Charas*'s. Their Anatomical Deſcriptions of many other Animals, may be examined with thoſe excellent ones publiſhed by the Members of the *French Academy*, and Mr. *Ray* in his *Synopſis*: And then the Imperfections of the one, and the Excellencies of the other, will be clearly ſeen, and the Diſtance between each exactly ſtated; though perhaps this may ſeem too far about, ſince it is manifeſt at firſt ſight, That no ancient Deſcriptions of any Creatures could be at preſent valuable, when their whole Anatomy was ſo imperfect. Some Miſtakes however, might, methinks, have been prevented; the *Ægyptian Sages*, ſure, might have taught them, that a Crocodile moves his Under-Jaw, and not his Upper; they might ſoon have found, that a Lion has Vertebres in his Neck, and with them, by conſequence, can move it upon occaſion, and has as large a Heart as other Creatures of his Size; that a (*p*) *Porcupine* doth not ſhoot his long Quills upon thoſe that ſet upon him; and

(*p*) Borellus de Motu Animalium, *Part* II. *Prop.* 219.

Fabuloſa narratio paſſim circumfertur de Hyſtrice, quæ cutem tendendo, ſpinas illas prælongas quibus dorſum ejus tegitur, longiùs ejaculatur. De hoc Animali enarrabo ea, quæ propriis oculis vidi. Hyſtrix non ejaculatur ſpinas ſuas prælongas, ſed tantummodo eas arrectas retinendo tremulâ concuſſione agitat & vibrat. Hoc quidem efficitur à pelle muſculoſâ, & à muſculis ſemilunaribus, quibus interna cutis ſtipata eſt, qui radices ſpinarum erigunt & concutiunt. Vid. quoque Raii Synopſin Animal. Quadruped. *pag.* 209.

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ſeveral other things, which would have prevented ſeveral Over-ſights that are not much for the Honour of *Ancient Diligence*. This would have ſaved abundance of fabulous Relations that are to be met with in ancient Naturaliſts. Their heaping up monſtrous Stories, without giving diſtinguiſhing Marks, many times, to teſtifie which they believed, and which not, is an evident Sign that they were not enough acquainted with theſe Creatures, to make a thorough Judgment what might be relied upon, and what ought to be rejected. For accurate Skill in theſe things helps a Man to judge as certainly of thoſe Relations which himſelf never ſaw, as Political Skill does to judge of Accounts of Matters that belong to Civil Life; and a great deal better, ſince Nature goes in an evener Courſe than the Wills and Fancies of Men, which alone, and not Rules of Prudence, are the Foundations of moſt of the Things that are tranſacted in the World.

CHAP.

CHAP. XXIV.

Of Ancient and Modern Aſtronomy and Optics.

HAving now gone through with the ſeveral Parts of *Natural Hiſtory*, I am to enquire into the State of *Phyſico-Mathematical* and *Phyſical* Sciences: Such as *Aſtronomy*, *Optics*, *Muſic* and *Medics*. I put *Aſtronomy* firſt, becauſe of the vaſt Extent and real Nobleneſs of its Subject; and alſo, becauſe it has ſuffered the leaſt Eclipſe of any part of Knowledge whatſoever in the barbarous Times: For when the *Greeks* neglected it, the *Arabs*, and from them the *Spaniards*, took it up. That this Enquiry might be the more exactly made, and that the Truth might be fully and clearly ſtated, Mr. *Edmond Halley*, whoſe Labours towards the Advancement of this Science, have made him Famous in ſo many diſtant Parts of the World, did me the Favour to communicate this following Paper:

'As for the *Aſtronomy* of the Ancients, 'this is uſually reckoned for one of thoſe 'Sciences wherein conſiſted the Learning 'of the *Ægyptians*; and *Strabo* expreſly

'declares,

declares, That there were in *Babylonia* ſeveral Univerſities, wherein Aſtronomy was chiefly profeſſed; and *Pliny* tells us much the ſame thing: So that it might well be expected, that where ſuch a Science was ſo much ſtudied, it ought to have been proportionably cultivated. Notwithſtanding all which, it does appear, That there was nothing done by the *Chaldæans* older than about $\overline{CCCC}$ Years before *Alexander*'s Conqueſt, that could be ſerviceable either to *Hipparchus* or *Ptolemee*, in their Determination of the Celeſtial Motions: For had there been any Obſervations older than thoſe we have, it cannot be doubted but the Victorious *Greeks* muſt have procured them, as well as thoſe they did, they being ſtill more valuable for their Antiquity. All we have of them, is only Seven Eclipſes of the Moon, preſerved in *Ptolemee's Syntaxis*; and even thoſe but very courſely ſet down, and the oldeſt not much above $\overline{DCC}$ Years before Chriſt; ſo that after all the Fame of theſe *Chaldæans*, we may be ſure that they had not gone far in this Science; and though *Calliſthenes* be ſaid, by *Porphyry*, to have brought from *Babylon* to *Greece*, Obſervations above $\overline{MDCCCC}$ Years older than *Alexander*, yet the proper Authors making

'no Mention or Uſe of any ſuch, renders 'it juſtly ſuſpected for a Fable. What 'the *Ægyptians* did in this Matter is leſs 'evident, no one Obſervation made by 'them being to be found in their Country-'man *Ptolemee*, excepting what was done 'by the *Greeks* of *Alexandria*, under $\overline{CCC}$ 'Years before *Chriſt*. So that whatever 'was the Learning of theſe two ancient 'Nations, as to the Motions of the Stars, 'it ſeems to have been chiefly Theorical; 'and I will not deny but ſome of them 'might very long ſince be apprized of the 'Sun's being the Centre of our Syſtem, 'for ſuch was the Doctrine of *Pythagoras* 'and *Philolaus*, and ſome others who were 'ſaid to have travelled into theſe Parts.

'From hence it may appear, That the '*Greeks* were the firſt Practical Aſtrono-'mers, who endeavoured in earneſt to 'make themſelves Maſters of the Science, 'and to whom we owe all the old Obſer-'vations of the Planets, and of the Equi-'noxes and Tropics: *Thales* was the firſt 'that could predict an Eclipſe in *Greece*, 'not $\overline{DC}$ Years before *Chriſt*, and without 'doubt it was but a rude Account he had 'of the Motions; and 'twas *Hipparchus* 'who made the firſt Catalogue of the 'Fix'd-Stars, not above $\overline{CL}$ Years before 'Chriſt; without which Catalogue there

'could

'could be ſcarce ſuch a Science as *Aſtro-*
'*nomy*; and it is to the Subtilty and Dili-
'gence of that great Author that the World
'was beholding for all its Aſtronomy, for
'above MD Years. All that *Ptolemee* did
'in his *Syntaxis*, was no more but a bare
'Tranſcription of the Theories of *Hip-*
'*parchus*, with ſome little Emendation of
'the Periodical Motions, after about $\overline{CCC}$
'Years Interval; and this Book of *Pto-*
'*lemee*'s was, without Diſpute, the utmoſt
'Perfection of the Ancient Aſtronomy,
'nor was there any thing in any Nation
'before it comparable thereto; for which
'Reaſon, all the other Authors thereof
'were diſregarded and loſt, and among
'them, *Hipparchus* himſelf. Nor did Po-
'ſterity dare to alter the Theories delivered
'by *Ptolemee*, though ſucceſſively *Alba-*
'*tegnius* and the *Arabs*, and after them the
'*Spaniſh* Aſtronomers under *Alphonſus*,
'endeavoured to amend the Errors they
'obſerved in their Computations. But
'their Labours were fruitleſs, whilſt from
'the Defects of their Principles, it was
'impoſſible to reconcile the Moon's Mo-
'tion within a Degree, nor the Planets,
'*Mars* and *Mercury*, to a much greater
'Space.

'Now in this Science to compare the
'Ancients with the Moderns, and ſo make

'a Parallel as just as may be, I oppose the 'Noble *Tycho Brahe*, or *Hevelius* to *Hip-* 'parchus, and *John Kepler* to *Claudius Pto-* 'lemee; and I suppose, no one acquain- 'ted with the Stars, will doubt, That the 'Catalogue of the Fix'd-Stars made by '*Tycho Brahe*, about C Years since, does, 'beyond Competition, far excell that of '*Hipparchus*, being commonly true to a 'Minute or two, when the other, many 'times, fails half a Degree, both in Lon- 'gitude and Latitude; and this is the 'fairlier carried, for that it was as easie 'for *Hipparchus* to observe the Fix'd-Stars, 'as for *Tycho* or *Hevelius*, had he made 'Use of the same Industry and Instruments, 'the *Telescope*, wherewith we now ob- 'serve to the utmost possible Nicety, be- 'ing equally unknown to *Tycho* as to *Hip-* 'parchus, and not used by *Hevelius*. But 'what may justly be expected from Mon- 'sieur *Cassini*, and Mr. *Flamsteed*, in this 'Matter, does yet further advance in Pre- 'ciseness, as not capable to err half a Mi- 'nute, though made with Instruments
(q) P. 57. '(q) *of the Production of* Gresham. As to 'the other Comparison between *Kepler* 'and *Ptolemee*, I question not but all 'that can judge, will be fully convinced 'that the Hypothesis of Eccentrics, and 'Epicycles introduced by the Ancients

'only

'only to repreſent the Motions, and that 'but courſly too, with the Opinion of '*Ptolemee* himſelf thereon, that the Na-'tural Motions were otherwiſe performed; 'ought not to be valued againſt that ele-'gant Theory of the Planetary Motions, 'firſt invented by the acute Diligence of '*Kepler*, and now lately demonſtrated by 'that excellent Geometer Mr. *Newton*, 'viz. *That all the Planets move in Elliptic 'Orbs about the Sun, at whoſe Center, being 'placed in one Focus of the Ellipſe, they 'deſcribe Equal Area's in Equal Times.* 'This, as it is the neceſſary Reſult of the 'Laws of Motion and Gravity, is alſo 'found rigorouſly to anſwer to all that 'is obſerved in the Motions; ſo that the 'Moderns may, with as much Reaſon 'as in any other Science whatſoever, 'value themſelves on their having Im-'proved, I had almoſt ſaid Perfected, this 'of *Aſtronomy*.'

Optical Inſtruments have been ſo ſerviceable in the Advancement of *Aſtronomy*, that the Sciences which demonſtrate their wonderful Properties ought next to be conſidered. Here alſo I muſt own my Obligation to Mr. *Halley*, for this following Account of what the Ancients have done in them, and how much they have been outdone by Modern Mathematicians:

'I ſuppoſe there are few ſo thorough-paced Fautors of Antiquity, as to brag much of their Skill, either in *Optics* or *Dioptrics*. Their Want of *Optics* appears in their want of Authors treating thereon; and yet much better in their want of *Ordonnance* (as it is called) in their Paintings, and *Baſſe Reliev's*, as has been already ſaid in its proper place. And as to *Dioptrics*, though ſome of the Ancients mention *Refraction*, as a natural Effect of Tranſparent *Media*; yet *Des Cartes* was the firſt who, in this Age, has diſcovered the Laws of *Refraction*, and brought *Dioptrics* to a Science. And the Invention of *Teleſcopes* and *Microſcopes*, which muſt be wholly allowed to this Century, has received no ſmall Improvements from the Study and Charge of Sir *Paul Neile*, and ſome other *Members of Greſham*. And theſe are ſuch Inſtruments of real Knowledge, that though we will allow the Ancients to have done all that great *Genii*, with due Application, could arrive at; yet, for want of them, their Philoſophical Argumentation could not come up to the preſent Pitch; not being able to fathom the boundleſs Depths of the Heavens, nor to unravel the *Minutiæ* of Nature, without the Aſſiſtance of the Glaſſes we are now poſſeſſed of.'

CHAP.

CHAP. XXV.

Of Ancient and Modern Muſic.

SIR *William Temple* having aſſured us, (*r*), that *it is agreed by the Learned, that the Science of* Muſic, *ſo admired by the Ancients, is wholly loſt in the World: And that what we have now, is made up of certain Notes that fell into the Fancy of a poor Friar, in chanting his Mattins:* it may ſeem improper to ſpeak of *Muſic* here, which ought rather to have been ranked amongſt thoſe Sciences wherein the Moderns have, upon a ſtrict Enquiry, been found to have been out-done by the Ancients. I have choſen, however, to ſpeak of it in this Place, for theſe following Reaſons. (*r*) P. 45.

(1.) That whereas all Modern Mathematicians have paid a mighty Deference to the Ancients, and have not only uſed the Names of *Archimedes*, *Apollonius*, *Diophantus*, and the other Ancient Mathematicians with great Reſpect; but have alſo acknowledged, that what further Advancements have ſince been made, are, in a

manner, wholly owing to the firſt Rudiments, formerly taught: Modern Muſicians have rarely made uſe of the Writings of *Ariſtoxenus*, *Ptolemee*, and the reſt of the Ancient Maſters in that Art; and, of thoſe that have ſtudied them, very few, unleſs their Editors, have confeſſed that they could underſtand them; and others have laid them aſide, as uſeleſs for their Purpoſe; ſo that it is very probable, many excellent Compoſers have ſcarce ever heard of their Names.

(2.) *Muſic* has ſtill, and always will have very laſting Charms. Wherefore, ſince the Moderns have uſed their utmoſt Diligence to improve whatſoever was improvable in the Writings of all ſorts of Ancient Authors, upon other equally difficult, and very often not ſo delightful Subjects, one can hardly imagine but that the World would, long e're now, have heard ſomething more demonſtrably proved of the Comparative Perfection of Ancient *Muſic*, with large Harangues in the Commendation of the reſpective Inventors, if their Memory had been preſerved, than barely an Account of the fabulous Stories of *Orpheus* or *Amphion*, which either have

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no Foundation at all, or as *Horace* of old underſtood them (*s*), are allegorically to be interpreted of their reducing a Wild and Salvage People into Order and Regularity. But this is not urged againſt Sir *William Temple*, who is not convinced of the Extent of Modern Induſtry, Sagacity and Curioſity; though to other Admirers of Ancient *Muſic*, who, upon Hearſay, believe it to be more Perfect than the Modern, and yet are, for other Reaſons, ſufficiently convinced of the unwearied Diligence, and anſwerable Succeſs of the Modern Learned, in retrieving and improving other Parts of Ancient Knowledge, it will not appear inconſiderable.

(*s*) *Silveſtres homines, ſacer interpresque Deorum,*
Cædibus & victu fœdo deterruit Orpheus:
Dictus ob hoc lenire Tigres, rabidosque Leones.
Dictus & Amphion, Thebanæ conditor arcis,
Saxa movere ſono Teſtudinis, & prece blandâ,
Ducere quo vellet.
Art. Poet.

(3.) *Muſic* is a *Phyſico-Mathematical* Science, built upon fixed Rules, and ſtated Proportions; which, one would think, might have been as well improved upon the old Foundations, as upon new ones, ſince the Grounds of *Muſic* have always been the ſame: And *Guido's Scale*, as Dr. *Wallis* aſſures us, is the ſame for Subſtance with the *Diagramma Veterum.*

(4.) The Ancients had not, in the Opinion of ſeveral who are Judges of the Matter, ſo many Gradations of Half-Notes and

and Quarter-Notes between the Whole ones, as are now uſed; which muſt of neceſſity introduce an unſpeakable Variety into Modern *Muſic*, more than could formerly be had: Becauſe it is in Notes, as it is in Numbers; the more there are of them, the more variouſly they may be combined together.

(5.) Exceſſive Commendations can ſignifie nothing here; becauſe every Man gives the higheſt Applauſes to the Perfecteſt thing he ever ſaw or heard, of any kind: And if he is not capable of Inventing in any particular Art himſelf, he can form no clear Idea of it, beyond what himſelf was then affected with, when he firſt heard thoſe diſcourſe of it, who pretended to be Judges of every thing relating to it.

(6.) It is very probable, that the Ancient *Muſic* had all that which ſtill moſt affects common Hearers. The generality of Auditors are moved with an excellent Voice, are pleaſed when Time is exactly kept, and love to hear an Inſtrument played true to a fine Voice, when the one does not ſo far drown the other, but that they can readily underſtand what is ſung, and can, without previous Skill, perceive that the one exactly anſwers the other throughout; and their Paſſions will be

be effectually moved with ſprightly or lamentable Compoſitions: In all which Things the Ancients, probably, were very perfect. To ſuch Men, many of our Modern Compoſitions, where ſeveral Parts are ſung or played at the ſame time, would ſeem confuſed, intricate and unpleaſant: Though in thoſe Caſes, the greater this ſeeming Confuſion is, the more Pleaſure does the Skilful Hearer take, in unravelling every ſeveral Part, and in obſerving how artfully thoſe ſeemingly diſagreeing Tones join, like true-cut Tallies, one within another, to make up that united Concord, which very often gives little Satisfaction to common Ears; though in ſuch ſort of Compoſitions it is, that the Excellency of Modern *Muſic* chiefly conſiſts. For, in making a Judgment of *Muſic*, it is much the ſame thing as it is in making a Judgment of *Pictures*. A great Judge in *Painting*, does not gaze upon an exquiſite Piece, ſo much to raiſe his Paſſions, as to inform his Judgment, as to approve, or to find fault: His Eye runs over every Part, to find out every Excellency; and his Pleaſure lies in the Reflex Act of his Mind, when he knows that he can judiciouſly tell where every Beauty lies, or where the Defects are diſcernible: Which an ordinary Spectator would

would never find out. The chiefeſt thing which this Man minds, is the Story; and if that is lively repreſented, if the Figures do not laugh when they ſhould weep, or weep when they ſhould appear pleaſed, he is ſatisfied, if there are no obvious Faults committed any where elſe: And this, perhaps, equally well, if the Piece be drawn by *Raphaël*, as by an ordinary Maſter, who is juſt able to make things look like Life. So likewiſe in *Muſic*; He that hears a *numerous* Song, ſet to a very moving Tune, exquiſitely ſung to a ſweet Inſtrument, will find his Paſſions raiſed, whilſt his Underſtanding, poſſibly, may have little or no ſhare in the Buſineſs. He ſcarce knows, perhaps, the Names of the Notes, and ſo can be affected only with an Harmony, of which he can render no Account. To this Man, what is intricate, appears confuſed; and therefore he can make no Judgment of the true Excellency of thoſe Things, which ſeem *fiddling* to him only, for want of Skill in *Muſic*. Whereas, on the contrary, the Skill or Ignorance of the Compoſer, ſerve rather to entertain the Underſtanding, than to gratifie the Paſſions of a skilful Maſter, whoſe Paſſions are then the moſt thoroughly raiſed, when his Underſtanding receives the greateſt Satisfaction.

(7.) It

(7.) It will be difficult to form a juſt Idea of the Pleaſure which the Ancient *Muſic* afforded, unleſs one reflects upon the confeſſedly unimitable Sweetneſs of the Ancient *Poetry*, the *Greek* eſpecially; which, when ſung by clear and ſweet Voices, in ſuch a manner, as that the Hearer never loſt a Syllable, could ſcarce fail of producing thoſe Emotions of Soul which the Poet intended to raiſe. And, indeed, the great End of *Muſic*, which is to pleaſe the Audience, was anciently, perhaps, better anſwered than now; though a Modern Maſter would then have been diſ-ſatisfied, becauſe ſuch Conſorts as the Ancient *Symphonies* properly were, in which ſeveral Inſtruments, and perhaps Voices, play'd and ſung the ſame Part together, cannot diſcover the Extent and Perfection of the Art, which here only is to be conſidered, ſo much as the Compoſitions of our Modern *Opera's*.

From all this it may, perhaps, be not unreaſonable to conclude, that though (*t*) *thoſe Charms of* Muſic, *by which Men and Beaſts, Fiſhes, Fowls and Serpents, were ſo frequently enchanted, and their very Natures changed*, be really and irrecoverably loſt, if ever they were had; yet the Art of *Muſic*, that is to ſay, of

(*t*) P. 45.

of Singing, and Playing upon Harmonious Inſtruments, is, in it ſelf, much a perfecter thing, though perhaps not much pleaſanter to an unskilful Audience, than it ever was amongſt the Ancient *Greeks* and *Romans*.

CHAP. XXVI.

Of Ancient and Modern Phyſic and Surgery.

AFter theſe *Mathematical* Sciences, it is convenient to go to thoſe which are more properly *Phyſical*, and in our Language alone peculiarly ſo called. What theſe want in Certainty, they make up in Uſefulneſs: For, if Life and Health be the greateſt good Things which we can enjoy here, a Conjectural Knowledge, that may but ſometimes give us Relief when thoſe are in danger, is much more valuable than a certain Knowledge of other Things, which can only employ the Underſtanding, or furniſh us with ſuch Conveniencies as may be ſpared; ſince we ſee that ſeveral Nations which never had them, lived happily, and did great Things in the World.

Before

Before I begin my Compariſon between *Ancient* and *Modern* Skill in *Phyſic*, it may be neceſſary to ſtate the Difference between an *Empiric* and a *Rational Phyſician*; and to enquire how far a *Rational Phyſician* may reaſon right, as to what relates to the Curing of his Patient's Diſtemper, though his general Hypotheſes be wrong, and his Theories, in themſelves conſider'd, inſufficient. An *Empiric* is properly he who, without conſidering the Conſtitution of his Patient, the Symptoms of his Diſeaſe, or thoſe Circumſtances of his Caſe which ariſe from Outward Accidents, adminiſters ſuch *Phyſic* as has formerly done good to ſome Body elſe that was tormented with an Illneſs which was called by the ſame Name with this that his Patient now labours under. A *Rational Phyſician* is he who critically enquires into the Conſtitution, and peculiar Accidents of Life, of the Perſon to whom he is to adminiſter; who weighs all the known Virtues of the Medicines which may be thought proper to the Caſe in hand; who balances all the Symptoms, and, from paſt Obſervations, finds which have been fatal, and which ſafe; which ariſe from Outward Accidents, and which from the Diſeaſe it ſelf; and who thence collects which ought ſooneſt to be removed,

moved, and which may be neglected, and thereupon preſcribes accordingly.

Now it is evident, that ſuch a Man's Preſcriptions may be very valuable, becauſe they are founded upon repeated Obſervations of the *Phænomena* of Diſeaſes. And he may form Secondary Theories, which, like *Ptolemee*'s *Eccentrics* and *Epicycles*, ſhall be good Guides to Practice; not by giving a certain Inſight into the firſt Cauſes, and ſeveral Steps, by which the Diſeaſe firſt began, and was afterwards carried on; but by enabling the Phyſician to make lucky Conjectures at proper Courſes, and fit Medicines, whereby to relieve or cure his Patient. And herein he may be equally ſucceſsful, whether he reſolves every thing into Hot or Cold, Moiſt or Dry; into Acids, or *Alkali*'s; into Salt, Sulphur, or *Mercury*; or into any thing elſe. He does not know, for Inſtance, that Spittle, Bile, and the Pancreatic Juice, are the main Inſtruments of Digeſtion; yet he ſees that his Patient digeſts his Meat with great Difficulty: He is ſure that, as long as that laſts, the ſick Man cannot have a good Habit of Body: He finds that the Diſtemper ariſes ſometimes, though not always, from a Viſible Cauſe; and he has tried the Goodneſs of ſuch and ſuch Medicines, in ſeemingly

ſeemingly parallel Caſes. He may be able therefore to give very excellent Advice, though he cannot, perhaps, dive into the Original and Cauſes of the Diſtemper ſo well as another Man; who having greater Anatomical Helps, and being accuſtomed to reaſon upon more certain Phyſiological Principles, has made a ſtrict Enquiry into that particular Caſe: And ſo by conſequence, tho' he cannot be ſaid to know ſo much of the Nature of the Diſeaſe as that other Man; yet, perhaps, their Method of Practice, notwithſtanding the great Diſparity of each others Knowledge, ſhall be, in the main, the ſame.

Though all this ſeems certain, yet, in the Argument before us, it is not an eaſie thing to ſtate the Queſtion ſo equally, as to ſatisfie all contending Sides. He that looks into the Writings of the generality of the *Rational Phyſicians*, as they called themſelves, by way of Eminence; that is to ſay, of thoſe who, about an Hundred Years ago, ſet up *Hippocrates* and *Galen*, for the Parents and Perfecters of Medicinal Knowledge, will find, throughout all their Writings, great Contempt of every thing that is not plainly deducible from thoſe Texts. On the other hand, If he dips into the Books of the Chymical Philoſophers, he will meet with equal Scorn

of thoſe Books and Methods, which they, in Deriſion, have called *Galenical.* And yet it is evident, that Practiſing Phyſicians of both Parties, have often wrought extraordinary Cures by their own Methods. So that there ſeems to have been equal Injuſtice on all hands, in excluding all Methods of Cure not built upon their own Principles. Here therefore, without being poſitive in a Diſpute, about which the Parties concerned are not themſelves agreed, I ſhall only offer theſe few Things: (1.) That if the Greatneſs of any one particular Genius were all that was to be look'd after, *Hippocrates* alone ſeems to have been the Man, whoſe Aſſertions in the Practical Part of Phyſic might be blindly received: For He, without the Help of any great Aſſiſtances, that we know of, did that, which, if it were ſtill to do, would ſeem ſufficient to employ the united Force of more than one Age. He was ſcrupulouſly Exact in Diſtinguiſhing Diſeaſes, in Obſerving the proper Symptoms of each, and taking Notice of their Duration, thereby to make a Judgment how far they might be eſteemed dangerous, and how far ſafe. Herein his particular Excellency ſeems to have lain; and this, in the Order of Knowledge, is the firſt thing that a *Rational Phyſician* ought

ought to make himſelf Maſter of: Which is a ſure Argument, that *Hippocrates* thoroughly underſtood what things were neceſſary for him to ſtudy with the greateſt Care, in order to make his Writings always uſeful to Poſterity. (2.) That, in the Opinion of the ableſt Judges, the *Natural Hiſtory of Diſeaſes* was as perfectly known, and they were as accurately diſtinguiſhed by the Ancients, as ever they have been ſince; and conſequently, that the Knowledge of the *Appearances*, or *Diagnoſtics* (as they call them) of every Diſtemper common to us and them, is owing to, at leaſt may be found in the Writings of the Ancients; for this they appeal to the Writings of *Aretæus*, and *Cælius Aurelianus*, whoſe Deſcriptions of the Diſeaſes they treat of, are in a manner perfect: The Fragments of *Herophilus*, and ſome other ancient Phyſicians preſerved in *Cælius Aurelianus*, ſhew this not to have been peculiar to him, but common with the other great Men of Antiquity. (3.) That, ſetting aſide Chymical Remedies, and ſome few Drugs brought to us out of the *Weſt-Indies*, the Body of the *Materia Medica* now in Uſe, is owing to the Ancients, who applied their Remedies with as great Skill and Judgment as any Modern Phyſicians whatſoever. But yet, (4.) Though

we ſhould allow the Ancient Methods of Practice to have been as perfect, nay, perfecter than thoſe now in uſe, which ſome great Men have eagerly contended for; yet it does not follow, that the whole Compaſs of their Profeſſion was ſo well underſtood by the Ancients as it is now; becauſe it is abſolutely impoſſible to form juſt Theories of all Diſeaſes, ſo as to lay down the perfecteſt Methods of Cure poſſible, which ſhall be adapted to all Perſons, in all Circumſtances, till Anatomy and Phyſiology are perfectly known; and by conſequence, later Theories will always be more eſtimable, as they are raiſed upon newer Diſcoveries in Anatomy and Phyſiology: So that we may be ſure no Ancient Theories can be ſo excellent, as ſome of thoſe which have been deviſed by Modern Philoſophers. (5.) That if the Addition of every new Medicine be an uſeful Acceſſion to the Body of *Phyſic*, then a new Method of Preparing known Medicines; of making thoſe things profitable and noble Remedies, which before were dreaded as Poyſons, or laid by as uſeleſs; and of trying ſuch Experiments upon Bodies yet unexamined, as will ſoon and certainly diſcover ſome of their moſt principal Virtues, muſt be of unſpeakable Advantage, and make the Knowledge of thoſe

thoſe who poſſeſs ſuch a Method juſtly more valuable than that of thoſe who want it. But this relates more particularly to *Chymiſtry*, of which enough has been ſaid already. (6.) That if the Practice of proper Judges be a reaſonable Prejudice for or againſt any thing, then this Science has received vaſt Improvements of late Years: For now the generality of Phyſicians acquieſce in Modern Theories, or, which in the preſent Diſpute is all one, advance new ones upon Anatomical and Phyſical Principles, purſuant to thoſe Diſcoveries which have been lately made. In their Practice, they mix *Galenical* and *Chymical* Medicines together. They own, that *Galenical* Ways of Preparing Drugs, anciently made uſe of in the Practice of *Phyſic*, are, in many Caſes, not ſo valuable as *Chymical* ones. In ſhort, though they pay a due Reſpect to the Writings of the Ancients, and in thoſe things where they find by their own Experience that the Ancient Obſervations hold, follow their Directions; yet their conſtant Language, and as conſtant Practice, whenſoever one oppoſes Ancient Authorities to them, is, *That the Ancients did very well for their Time; but that Experience, and further Light, has taught them better Things.* This, I muſt

needs own, has very great Weight with me, who am apt, *cæteris paribus*, to believe every Man in his own Way; *Phyſicians* eſpecially, becauſe their Science is entirely got by a long Series of repeated Experiments and Obſervations: So that it ſeems to be almoſt impoſſible, but that, in all ſuch Caſes, where Men have the Aſſiſtance of former Light, and where the Subject upon which they employ their Pains wanted a great deal of that Perfection, which thoſe that ſtudy it have an Idea of, as ſtill wanting, and can only be attained by a longer Experience, ſucceſſive Ages muſt make great Additions to the former Stock. (7.) That though the noble Diſcoveries of theſe latter Ages, might, poſſibly, be found in *Hippocrates*, *Ariſtotle* and *Galen*; yet, ſince no Interpreters could ever find them there, till they were actually diſcovered anew by Modern Phyſicians, who followed Nature only as their Guide, theſe late Diſcoverers have as juſt Right to the Glory due to ſuch Diſcoveries, as the Ancients could poſſibly have: They both copied after the ſame Original; they both decyphered the ſame Characters, that before were unintelligible; not by reading Books, but by trying Experiments, and making Obſervations. And therefore, *Vander Linden*, *Almeloveen*,

Almeloveen, and the reſt of the Bigots for the Ancients, deal very unjuſtly, when they cry out, upon the Sight of any New Diſcovery, This *Hippocrates* knew; This *Ariſtotle* taught. Could theſe Men have made theſe Diſcoveries by ſtudying thoſe Ancient Authors, without the Aſſiſtance of Dr. *Harvey, Aſellius, Pecquet, Malpighius,* or the reſt? This would hold, in caſe the *Circulation of the Blood,* the *Chyle-Veſſels, Lympheducts,* and the other great Diſcoveries in Anatomy, had really been in the Ancients. That they are not, I hope I have proved already. To which I ſhall only add, That former Commentators wanted neither *Greek,* nor Skill; and had ſuch Things been in their Writings, they would infallibly have found them there.

It is eaſie now to tell what Acquiſitions have been made ſince *Galen*'s Days. When *Hippocrates* lived, Anatomy was a rude, imperfect Thing: It has ſince been growing, and the Theories of all Diſeaſes have been proportionably more compleat. *Chymiſtry* has been introduced into *Phyſic*; thereby the *Materia Medica* has been enlarged by ſome as noble Medicines as any the Ancients were acquainted with; the Nauſeouſneſs of many Medicines has been removed; and they have been made leſs

clogging, and more efficacious, ſince they may be taken in leſſer Quantities, and in more pleaſant Vehicles; to as good, if not better purpoſe than before. *Botanics* have been unſpeakably enlarged; and thereby alſo the Diſpenſatories have been ſtocked with ſome excellent Remedies, that the Old World knew nothing of. If theſe Particulars be rightly ſtated, as they ſeem to be, they will go very far to decide the Queſtion: And ſo I ſhall leave it, without determining any thing poſitively about it. So much for that part of *Medicine* which in our Language is peculiarly call'd *Phyſic*. *Surgery* comes next to be conſidered; which though at preſent it be looked upon as inferior to *Phyſic*, yet it was much the ancienteſt, and is ſtill the certaineſt part of *Medicine*. For here the Eye directs the *Surgeon* how he ſhall proceed, and if he knows but the Virtue of his Medicines, and how to apply them, he can, generally ſpeaking, tell whether his Patient be curable or not. Anciently this was only a Branch of the *Phyſician*'s Work; and the Old *Phyſicians* in the Heroical Times, *Æſculapius*, *Chiron*, *Machaon*, and the reſt, were little more than *Surgeons*, that could apply a Plaiſter, and cure a Green Wound. Nay, after Learning had emboldened Men to reaſon upon

upon the Cauſes of Diſeaſes, whoſe Original was not viſible to the naked Eye, and to try whether Inward Remedies would not cure them, *Surgery* was conſtantly treated of by *Phyſicians*, as a Part of their Profeſſion. *Celſus* alone will convince every Man of the Truth of this Propoſition.

But how they treated of it, I durſt not adventure to aſſert; tho' the Public will thank me for leaving it untouch'd, ſince that eminently Learned Surgeon, Mr. *Charles Bernard*, who is ſo great an Honour to his Profeſſion, has done me the favour to communicate this following Paper, which I ſhall ſubjoin in his own words:

'If we enquire into the Improvements 'which have been made by the Moderns 'in *Surgery*, we ſhall be forced to confeſs, 'that we have ſo little reaſon to value 'our ſelves beyond the Ancients, or to 'be tempted to contemn them, as the 'faſhion is among thoſe who know little, 'and have read nothing, that we cannot 'give ſtronger or more convincing Proofs 'of our own Ignorance, as well as our 'Pride. I do not pretend that the Mo-'derns have not at all contributed to-'wards the Improvement of *Surgery*; 'that were both abſurd and injurious, and

'would

'would argue as much Folly as that which 'I am reproaching: but that which I am 'conteſting for, is, That it conſiſts ra- 'ther in refining and dreſſing up the In- 'ventions of the Ancients, and ſetting 'them in a better light, than in adding 'many important ones of our own. Whe- 'ther it be, that the Art of Healing Ex- 'ternal Hurts, being principally the Sub- 'ject of our Senſes, was earlier ſtudied, 'and therefore capable of being ſooner 'brought to a greater degree of Perfe- 'ction, than the other Branch of Medi- 'cine; or, that the majority of the meer 'Profeſſors having been, for ſome Ages, illi- 'terate and Empirical, it hath not been 'advanc'd and cultivated ſo as it might 'have been, had they been better qua- 'lified than they generally were, and do 'yet, for the greateſt part continue to 'be: For a Teſtimony of which, that 'exceeding Paucity of good Writers which 'occurr in *Surgery*, when compar'd with 'thoſe in moſt of the other learned Arts 'and Sciences, is, in my Opinion ſuffi- 'cient; and yet, were they fewer, 'twould, 'in the Judgment of theſe *Scioli*, be no 'great detriment to the Art. For the 'Folly of which Aſſertion, the beſt Ex- 'cuſe that can be made, ſeems to be, that 'becauſe ſome Methods of proceeding

'both

'both in *Phyſic* and *Surgery*, which are 'incommunicable, to which every Man 'muſt be directed by his own Judgment, and Natural Sagacity, not being to be 'found in thoſe Authors whom theſe 'opinionated Practitioners have had the 'luck to conſult, they are led imme-'diately to deſpiſe all Reading, as uſeleſs 'and uninſtructive; eſpecially that of the 'Ancients, who do not generally, I con-'feſs, write to Novitiates and Fools, or 'to thoſe who will be always ſuch.

'But whoever hath been converſant in 'their Writings, and hath the Opportu-'nity and Capacity of Comparing and 'Judging from his own Experience, will 'readily confeſs, that one thing which 'does not a little recommend the Reading 'of them beyond moſt of the Moderns, 'is, that they are more accurate in de-'ſcribing the *Pathognomonics*, and more juſt 'and nice in diſtinguiſhing the Species of 'Tumors and Ulcers, than our more re-'fined Moderns are.

'If this Age hath par'd away any rude 'and ſuperfluous Methods of Practice, as 'it muſt be confeſſed they have, it cannot 'be demonſtrated that they were all de-'riv'd from the Ancients, but were in a 'great meaſure introduc'd by ignorant and 'barbarous Profeſſors of a much later date.

'There

'There is no queſtion but that the 'principal Improvements which have theſe 'latter Ages been made in *Surgery*, are 'owing chiefly to the Diſcoveries which 'have been made in Anatomy, by which 'we are better enabled to ſolve many of 'thoſe *Phænomena* which were before 'inexplicable, or explained amiſs; the 'moſt important part, in the mean while '(I mean, the Art of Healing, to which 'all the others ought to be ſubſervient) 'remaining very little better than the An-'cients left it.

'As an unconteſtable Proof of what I 'ſay, I appeal to all thoſe Bodies of '*Surgery* which have been hitherto pub-'liſhed by the moſt Learned and Celebra-'ted of the Moderns, being all manifeſtly 'Tranſcripts from one another, and the 'beſt of them from the Ancients. But 'this may indeed be ſaid in Defence of the 'Moderns in this Particular, That even 'Tranſcribing is not their Invention, tho' 'it be their Practice; for *Ætius* and *Ægi-'neta* have borrow'd not a little of what 'they have, from *Galen*; and *Marcellus 'Empiricus* more groſly from *Scribonius 'Largus*, without ſo much as remembring 'his Name among the reſt of thoſe Au-'thors to whom he was leſs beholden.

'Among

'Among all the Syſtematical Wri-
'ters, I think there are very few who re-
'fuſe the Preference to *Hieron Fabricius*
'*ab Aquapendente*, as a Perſon of unque-
'ſtioned Learning and Judgment; and
'yet is not he aſham'd to let his Readers
'know, that *Celſus* among the *Latins*
'(who, he tells us, is *Mirabilis in Om-*
'*nibus*, and adviſes, in *Horace*'s words,
'*Nocturnâ verſare manu, verſare diurnâ,*)
'*Paulus Ægineta* among the *Greeks*, and
'*Albucaſis* among the *Arabians* (whom
'I am unwilling to place among the
'Moderns, being in the number of thoſe
'whom our Modern Judges reject, either
'becauſe they never read him, or becauſe
'he had the misfortune to live DC Years
'ſince) are the Triumvirate to whom he
'principally ſtands indebted, for the Aſ-
'ſiſtance he received from them, in com-
'poſing his excellent Book.

'But how many Operations are there
'now in uſe, which were unknown to
'the Ancients? I fear, that upon a due
'Enquiry, there would be more uſeful
'ones found to be omitted or diſcon-
'tinued, than to have been invented by
'us. But to deſcend a little to Particu-
'lars, that we may, without Prejudice
'or Partiality, be enabled to determine
'whether the Ancients are indeed ſo con-
'temtible,

'temtible, and their Writings ſo uſeleſs,
'as ſome would repreſent them. *Cutting*
'*for the Stone* (to begin with that) was
'unqueſtionably theirs, and the man-
'ner accurately deſcribed by *Celſus* and
'others; and yet, that no Perſon or Age
'may be defrauded of the Glory they de-
'ſerve, where we can do them right, we
'muſt confeſs, that that way of perform-
'ing it which in moſt Caſes is preferrible,
'and in ſome only practicable, which by
'Authors is ſtyl'd *Magnus Apparatus*, the
'High Operation, or Cutting upon the
'Staff, was invented by one *Johannes de*
'*Romanis* of *Cremona*, who flouriſht at
'*Rome*, about the Year MDXX. The
'Manner of the Operation, and the In-
'ſtruments neceſſary, were firſt deſcribed
'and publiſh'd by his Scholar *Marianus*
'*Sanctus Barolitanus*, at *Venice*, in MDXXXV.
'The Uſe of the *Modiolus*, in Opening the
'Skull, was likewiſe theirs; our Country-
'man *Woodall* only mending the Inſtru-
'ment, by making that taper, which was
'before cylindrical, and for that reaſon
'not altogether ſo ſecure: The *Alæ*, or
'Wings, being the Invention of that Great
'Man *Aquapendens*, to whom we ſtand
'obliged for many other uſeful Inſtru-
'ments. The *Paracenteſis*, in all its kinds,
'is theirs: *Barbette*, indeed, invented an

'Inſtru-

'Inſtrument which is ſometimes more 'commodiouſly made uſe of than the An-'cient Methods are. *Laryngotomy*, or the 'Opening of the Wind-Pipe in a Quinſey, 'was practis'd by them; an Operation 'ſecure and neceſſary, however, at this day 'ſo diſus'd, that it is almoſt become ob-'ſolete, either through the Timidity of the 'Patient, or Relations, or the Backward-'neſs or Ignorance of the Phyſician or 'Surgeon; and though *Aretæus*, *P. Ægi-'neta*, and *Cælius Aurelianus*, ſeem, from 'the Authority of *Antyllus*, to diſcourſe 'doubtfully of it, yet the greateſt part 'of the Ancients, both *Greeks* and *Ara-'bians*, adviſe it; and *Galen* in particular, 'from Reaſon and Experience, as well as 'from the Authority of *Aſclepiades*, juſtly 'recommends it as the laſt Refuge in a 'Quinſey. *Cutting for the Hernia Inteſti-'nalis*, with the true Diſtinctions and 'Cures of all the other Species, are ac-'curately deſcribed by them. They 'taught us the Cure of the *Pterygion* and 'Cataract; they deſcrib'd and diſtinguiſh'd 'all the Diſeaſes of the Eyes, (which 'were not then, as now, to the reproach 'of the Age they are, almoſt ſolely in 'the Hands of Old Women and Moun-'tebanks) as juſtly as any of our Modern 'Oculiſts, who, indeed, do little more

'than

'than tranſcribe from them. *Opening an* 'Artery, and the *Jugular-Vein*, (pretended 'to be revived here in *England*) was no 'more firſt attempted by the Moderns, 'than making *Ligature* in an *Aneuriſm*, 'which tho' an Operation of no mighty 'difficulty, was certainly not underſtood, 'very lately, by *Fred. Ruyſch*, a conſi- 'derable *Dutch* Anatomiſt, and Profeſſor 'of that and Surgery at *Amſteldam*, [as 'may be ſeen in his *Obſervationes Ana-* 'tomico-Chirurgicæ, Obſ. 2. printed in 'Quarto, at *Amſtel.* MDCXCI.] The *Extir-* 'pation of the Tonſils, or *Uvula*, is not 'our Invention; though, indeed, the re- 'moval of the former by *Potential Cau-* 'teries, which we ſometimes uſe, when 'the Patient will not admit Exciſion, or 'Fire, ſeems neither to have been practis'd 'nor known to the Ancients. The man- 'ner of treating the *Fiſtula Lacrymalis*, '(a nice and difficult Cure, very often,) 'which we continue at this day, is no 'other than what was taught by them, 'only the Uſe of the *Cannula* for the 'Cautery ſeems owing to *Fabr. ab Aqua-* 'pendente. As for the *Actual Cautery*, 'no inconſiderable, however terrible a 'Branch of Surgery it may ſeem, though 'Coſtæus, *Fienus* and *Severinus* have written 'ſo amply concerning it, yet from one

'ſingle

'ſingle Aphoriſm 'tis demonſtrable, that '*Hippocrates* knew its true Uſe as well as 'any that have ſince ſucceeded him; not 'to mention how frequent it is in the 'Writings of all the reſt of the Ancients, 'and us'd in many Caſes, (I do not 'doubt but with admirable ſucceſs) 'wherein it is wholly neglected, or not 'underſtood by us. The Cure of the '*Varices*, by Inciſion, ſcarce talk'd of in 'our days, ſeems to have been familiarly 'practis'd among the Ancients, as is ma-'nifeſt from *Celſus*, and *Paulus Ægineta*; 'though ſo painful an Operation, that, as '*Tully* [2. *Tuſcul.*] and *Plutarch* tell us, *Ma-'rius* was the firſt who in one Leg under-'went it, ſtanding, and without being 'bound, though he could not be prevail'd 'upon to purchaſe with ſo much Torture 'a Cure in the other: And though *Pliny* 'tells us, that he was *unus Hominum*, the 'ſingle Inſtance; yet *Tully* aſſures us, that 'by his Example, there were others that 'ſuſtain'd it with equal Reſolution and 'Fortitude. And whoever is converſant 'with thoſe obſtinate Varicous Ulcers 'which we frequently meet with, will 'confeſs, that for the effecting a Cure, 'tis abſolutely neceſſary, however pain-'ful and ſuperfluous an Operation ſome 'may eſteem it. The Ancients mention

'the *Vari* and *Valgi*, and prescribe us a 'Method of Cure; but the manner of 'their Reduction by the Instruments now 'in use they knew not, which were the 'Invention of *Fabricius ab Aquapendente*; 'as was also that for *Extraction* of the *Po-* 'lypus, which nevertheless the Ancients 'cur'd as frequently, though not so com- 'modiously as our selves. But the *Po-* 'lypus of the *Ear* (a Disease indeed which 'occurrs not so often as the preceding) 'seems so little known to the Moderns, 'that the very Mention of any such Disease 'is rarely to be met with in any of their 'Writings, yet the Cure of it is not 'omitted by the Ancients. They were 'perfectly acquainted and furnish'd with 'convenient Instruments for the Redu- 'ction of all the Species of *Fractures* and '*Luxations*, and the Methods of treating 'them afterwards; together with all the 'kinds of *Sutures* at this day in use among 'us, and some too that are now lost, at 'least so uncertain, that some very learned 'Men have thought they employed not 'their time amiss, in endeavouring to 'determine what they were, and to re- 'cover their Use. And though some 'have contended, that *Issues* were un- 'known to them, the contrary is evident, 'from *Celsus*, and *Cælius Aurelianus*, tho'

'we

'we muſt acknowledge, that the placing 'and continuing them as now we do, ap- 'pears not to have been in uſe among 'them. Nor is the *Seton* ſo extremely 'Modern, but that *Lanfrancus*, who liv'd 'CCCC Years ſince, directs its Uſe, and de- 'ſcribes the manner of Making, (yet men- 'tions it not as an Invention of his time,) 'though, indeed, till *Hildanus's* his days, 'it ſeems to have been always made with 'the Actual Cautery.

'There is no doubt but the Τραχηλο- 'μοτομία, or *Cutting the Infant out of 'the Mother*, to preſerve both, common- 'ly call'd *Partus Cæſareus*, (not often, 'if at all practis'd among us, though re- 'viv'd by ſome of our Neighbours with a 'ſucceſs which ought to provoke the Emu- 'lation of our Profeſſors here) is owing 'purely to the Felicity of the Moderns of 'the laſt Century. For, not to enter 'into the Controverſie, whether *Pliny*, '*Nonius* or *Iſidore* were in the right, in 'aſſerting, that the Firſt of the *Cæſars* 'was denominated from his manner of 'Birth; or *Probus* and *Feſtus*, in affirm- 'ing, that they were the *Cæſones*; whereas 'the *Cæſars* were only ſo called, from 'their Hair: Moſt certain it is, that 'neither Side pretend the Operation to 'have been done *Matre Superſtite*: Nor

'is there any Evidence, that cutting the 'Fœtus out of the Womb, and preſerving 'the Mother, was ever propos'd or thought 'of by the Ancients, whether *Greek*, *Latine* 'or *Arabian*; both the Story, and the 'Reaſon of the Name, being to be found 'only in the Hiſtorians and Gramma-'rians. Who it was that firſt propos'd 'or practis'd it, I confeſs, I am not able 'to determine: For *Fr. Roſſetus*, who firſt 'wrote ſolemnly and expreſly, or indeed 'at all, concerning it, produces ſeveral 'Examples of other Men's Experience and 'Succeſs, before ever he attempted it him-'ſelf.

As for thoſe Operations which the *Greeks* 'call'd Κολοβώματα, or *Curtorum Chirurgia*, 'they amounted to no more than cutting 'the Hair-Lip, or the like, for that they 'knew and practis'd; and therefore it be-'comes us to do right to the Age whoſe 'it was, for the Diſcovery of that which '*Gaſpar Taliacotius* properly ſo calls, and 'which himſelf brought to Perfection; 'and (whatever Scruples ſome who have 'not examin'd the Hiſtory, may entertain 'concerning either the Truth or Poſſibility 'of the Fact) practis'd with wonderful 'Dexterity and Succeſs, as may be prov'd 'from Authorities not to be conteſted. 'So that it is a moſt ſurpriſing thing to

'con-

'consider, that few or none should have
'since attempted to imitate so worthy
and excellent a Pattern, especially in an
'Age wherein so many deplorable and
'scandalous Objects do every day seem
'either to beg or command our Assistance.
'But I do not assert him to have been the
'first Inventor, because it is what I find
'mention'd, though imperfectly, by *Alex.*
'*Benedictus*, before *Taliacotius* was born;
'and afterwards, by *Vesalius*, in his *Chi-*
'*rurgia Magna*, if at least that mean Piece
'be his, as we have it publish'd by *Bor-*
'*garutius*, which *Fabr. Hildanus* justly
'questions. There is likewise an Epistle
'quoted by *Steph. Gourmelenus*, in his
'*Ars Chirurgica*, written from one *Calen-*
'*tius* to his Friend *Orpianus*, (who, it seems,
'had the misfortune to want a Nose,)
'giving him an Account, that there was
'one *Brauca*, a *Sicilian*, *qui didicit nares*
'*inserere*, which *Calentius* himself had seen
'perform'd, and therefore invites him to
'come, with this Encouragement, That
'he might be sure to return with a Nose
'of what size he pleas'd. Who this *Or-*
'*pianus* was, is not material to enquire;
'nor can I, I confess, say much of this
'*Brauca*, (or *Branca*, as *Taliacotius* calls
'him, who seems to know no more of
'Him or his History, than what he tran-

'ſcrib'd from *Gourmelenus*; and *Gourme-*
'*lenus* himſelf, no more than is expreſs'd
'in this Epiſtle of *Calentius*, which af-
'fords but little light into the Hiſtory;)
'though it is very probable that he was
'the ſame Perſon whom *Ambr. Parey* men-
'tions to have practis'd this way of
'Inoculating Noſes ſome Years before his
'time in *Italy*, and gives an Inſtance of
'a Cadet of the Family *à S. Thoano*, who
'being weary and aſham'd of a Silver
'Noſe, applying himſelf to this *Italian*,
'return'd with one of Fleſh, to the Won-
'der and Satisfaction of all that knew
'him. As for this *Eliſius Calentius*, from
'whom we have the firſt mention, that I
'can find, of any ſuch Operation, he was
'Contemporary and Familiar with *San-*
'*nazarius*, and *Jov. Pontanus*, who men-
'tions him; as does alſo *Lilius Gyraldus*,
'in his Hiſtory of the Modern Poets, and
'tells us, agreeably enough, that he was
'Poor, Amorous, and a Poet; that he was
'born at *Amphracta*, in *Apulia*, but liv'd
'generally at *Naples*: His Works were
'printed about MDIII; and afterwards,
'his *Epiſtles*, among other ſelect ones,
'were publiſh'd by *Gilb. Cognatus*, and
'printed by *Oporinus*, in MDLVIII. But
'I muſt not omit, among the reſt, (what
'indeed is ſo notorious, that no Man, I

'ſup-

'ſuppoſe will deny it,) That all the ſorts 'of *Amputations*, as Limbs, and Breaſts, *&c.* 'were as familiarly practis'd among the 'Ancients, as any can pretend they are 'among us, if we had only the Authority 'of a Poet for it, *Immedicabile vulnus 'enſe reſcindendum eſt.*

'The Art of *Bandage*, or *Rowling*, 'no mean or unneceſſary, though neg-'lected piece of *Surgery*, and upon which 'the *French* do ſo much value themſelves, 'they knew ſo well, and had in ſuch per-'fection, that we have not pretended to 'add much to that excellent and uſeful 'Treatiſe which *Galen* hath expreſly writ-'ten upon that Subject. And though the 'Variety of Inſtruments now in uſe may 'ſeem, in ſome meaſure, to be juſtly chal-'leng'd by the Moderns, every Man ad-'ding as his own Fancy ſuggeſted, and 'the Neceſſity required; yet by what are 'tranſmitted to us by the Ancients, 'tis 'notorious, that they were neither igno-'rant nor deſtitute of thoſe which were 'moſt neceſſary; and that they had va-'riety of others too, may, by what we 'ſee deſcrib'd by *Oribaſius* and others, and 'at this day made uſe of, more eaſily be 'imagin'd than prov'd, but ſeems highly 'probable.

'As for Topical Medicines, moſt cer-
'tain it is that we are oblig'd to them, for
'inſtructing us in the Nature and Proper-
'ties of almoſt all thoſe of which we do
'at this day form our Applications; ſome
'few excepted, the Productions of Mo-
'dern Chymiſtry, in this or the preceding
'Century.

'And as for general Methods of Cure,
'many of them have been ſo excellently
'well handled by the Ancients, (to in-
'ſtance only in Wounds of the Head)
'that ſeveral of the Moderns who have
'written moſt judiciouſly upon them,
'have been of Opinion, that they could
'not ſerve and oblige Poſterity better,
'than by Commenting upon that admi-
'rable Book of *Hippocrates* upon the ſame
'Subject.

'That which without Injury to the
'Ancients, or Vanity in our Selves, may
'be juſtly ſaid, is, That the publiſhing
'Obſervations after that Method which
'ſome of the Moderns have done, is that
'wherein we muſt be allowed infinitely
'to have exceeded them; and is vaſtly
'of more Advantage to the Reader, than
'the peruſal of tedious Syſtems are ca-
'pable of being, two or three of which
'generally comprehending whatever is to
'be found in all the reſt: But particular

'Caſes,

'Caſes, when judiciouſly and faithfully re-
'ported, (of which too few, I fear, even
'of the Moderns, are guilty,) *Et prodeſſe*
'*ſolent & delectare*, are diverting and
'inſtructive at once, the Reader more
'effectually adding other Men's Expe-
'rience to his own.

'But to inſiſt upon every Particular,
'and to pretend to demonſtrate what hath
'been invented, diſcontinued, or loſt in
'every Age, if it be to be done, requires
'a Perſon of greater Leiſure, and infi-
'nitely more capable than my ſelf. What
'I have ſaid, is ſufficient to ſhew, that it
'becomes us to ſpeak of the Ancients
'with Reſpect and Civility at leaſt, if it
'were only for this, That it was our
'Inſtruction, and the Benefit of Mankind
'in general, which induc'd them to take
'that Care, and to be at ſo much Expence
'of Time and Labour to communicate
'their Knowledge to the World: Not that
'we are implicitely to be determin'd by
'their Authority, or to ſuppoſe that they
'have not left room for ſucceeding Ages
'to Invent, and to Improve all thoſe Parts
'of *Surgery* wherein they appear either to
'have been miſtaken or deficient. For
'my own part, I muſt confeſs, I do en-
'tirely concurr with *Thomas Bartholine*,
'[*Epiſt. Med.* Cent. 3.] who very well

'under-

'underſtood the Advantages which the 'Moderns had, and was himſelf as ſoli-'citous for the Improvement of Know-'ledge, as inquiſitive into Nature, and 'as happy in his Diſcoveries, as any of 'thoſe who imagine it a part of their 'Wit and Breeding, to ridicule and con-'temn the Ancients; *Peſſimè ſtudiis ſuis 'conſuluunt* (ſays he) *qui ita recentiorum 'ſcriptis ſe immergunt, ut veteres vel neg-'ligant vel contemnant, quum plerarumque 'rerum lux ex illis pendeat:* And in ano-'ther place; *Ita ſemper recentiorum ſen-'tentiis & opinionibus calculum adjeci, ut 'ſua antiquitati reverentia ſervaretur, cui 'artis noſtræ fundamenta debemus.*

CHAP.

CHAP. XXVII.

Of Ancient and Modern Natural Philoſophy.

HAving gone through with the moſt conſiderable Branches of *Natural* and *Mathematical Knowledge*, I am now to enquire into the Comparative Excellency of Ancient and Modern *Books of Philoſophy*, thereby to ſee in which of them Nature, and its Operations, are explained beſt. Here I ſhall firſt enquire into the ſeveral *Methods of Philoſophizing*; and afterwards, into the Intrinſic Worth of the Doctrines themſelves. *Moderns* here are taken in a very ſtrict ſence. I ſhall mention none who have made any *Entries upon this noble Stage of Nature* (*u*) above LXXX Years ago, ſince the time of thoſe firſt Flights of the Reſtorers of Learning, that are ſo exceedingly applauded by Sir *William Temple*. For *Natural Philoſophy* was the laſt part of Knowledge which was cultivated with any particular Care, upon the Revival of Learning; though *Natural Hiſtory*, which is a principal Ground-work, had been long before encreaſing, and a conſiderable Heap of

(*u*) P. 44.

of Materials had been collected, in order to the Work.

As for *Modern Methods of Philoſophizing*, when compared with the *Ancient*, I ſhall only obſerve theſe following Particulars. (1.) No Arguments are received as cogent, no Principles are allowed as current, amongſt the celebrated Philoſophers of the preſent Age, but what are in themſelves intelligible; that ſo a Man may frame an Idea of them, of one ſort or other. Matter and Motion, with their ſeveral Qualities, are only conſidered in Modern Solutions of Phyſical Problems. *Subſtantial Forms*, *Occult Qualities*, (x), *Intentional Species*, *Idioſyncraſies*, *Sympathies and Antipathies of Things*, are exploded; not becauſe they are Terms uſed by Ancient Philoſophers, but becauſe they are only empty Sounds, Words whereof no Man can form a certain and determinate Idea. (2.) Forming of Sects and Parties in Philoſophy, that ſhall take their Denominations from, and think themſelves obliged to ſtand by the Opinions of any particular Philoſophers, is, in a manner, wholly laid aſide. *Des Cartes* is not more believed upon his own Word, than *Ariſtotle*: Matter of Fact is the only thing appealed to; and Syſtems are little further regarded, than as they are proper to inſtruct

(x) P. 46.

inſtruct young Beginners, who muſt have a general Notion of the whole Work, before they can ſufficiently comprehend any particular Part of it; and who muſt be taught to reaſon by the Solutions of other Men, before they can be able to give Rational Solutions of their own: In which Caſe, a falſe Hypotheſis, ingeniouſly contrived, may now and then do the Service of a true one. (3.) *Mathematics* are joined along with *Phyſiology*, not only as Helps to Men's Underſtandings, and Quickeners of their Parts, but as abſolutely neceſſary to the comprehending of the Oeconomy of Nature, in all her Works. (4.) The *New Philoſophers*, as they are commonly called, avoid making general Concluſions, till they have collected a great Number of Experiments or Obſervations upon the Thing in hand; and, as new Light comes in, the old Hypotheſes fall without any Noiſe or Stir. So that the Inferences that are now a-days made from any Enquiries into Natural Things, though perhaps they be ſet down in general Terms, yet are (as it were by Conſent) received with this tacit Reſerve, *As far as the Experiments or Obſervations already made, will warrant.*

How much the purſuing of theſe Four Things will enlarge *Natural Philoſophy*, is eaſie

eaſie to gueſs. I do not ſay, that none of theſe things were anciently minded; but only, that they were not then ſo generally put in practice. The great Men of Antiquity often expreſt themſelves in unintelligible Cant: They chiefly aim'd at being Heads of particular Sects: Few of their Natural Philoſophers were great Mathematicians: And they did in general eſtabliſh Hypotheſes without a ſufficient Fund of Experiments and Obſervations whereupon to build them. The *Corpuſcularian Philoſophy* is in all probability the oldeſt, and its Principles are thoſe intelligible ones I juſt now commended. But its Foundations being very large, and requiring much Time, Coſt, and Patience, to build any great Matters upon, it ſoon fell, before it appears to have been throughly underſtood. For it ſeems evident, that *Epicurus* minded little but the raiſing of a Sect, which might talk as plauſibly as thoſe of *Ariſtotle*, or *Plato*, ſince he deſpiſed all manner of Learning, even Mathematics themſelves, and gloried in his having ſpun all his Thoughts out of his own Brain; a good Argument of his Wit indeed, but a very ordinary one of that Skill in Nature which *Lucretius* extols in him, as often as he takes occaſion to ſpeak of him. The Ancient Phyſics look

look like a thing wholly of Oſtentation and Pomp, otherwiſe I cannot underſtand why *Plato* ſhould reprove *Eudoxus* and *Archytas*, for trying to make their Skill in Geometry uſeful in Matters of Civil Life, by inventing of Inſtruments of public Advantage; or think that thoſe ſublime Truths were debaſed, when the unlearned part of Mankind were made the better for them. And therefore, as *Plutarch* complains, in his *Life of Marcellus*, Mechanical Arts were deſpiſed by Geometers till *Archimedes*'s Time: Now though this be particularly ſpoken there by *Plutarch*, of the Making of Inſtruments of Defence and Offence in War, yet it is equally applicable to all the Ancient Philoſophy and Mathematics in general. The Old Philoſophers ſeemed ſtill to be afraid that the Common People ſhould deſpiſe their Arts, if generally underſtood: This made them keep, for the moſt part, to thoſe Studies which required few Hands and Mechanical Tools to compleat them: Which to any Man that has a right Notion of the Extent of a Natural Philoſopher's Work, will appear abſolutely neceſſary. Above all, the Ancients do not ſeem ſufficiently to have underſtood the Connexion between Mathematical Proportions of Lines and Solids, in an abſtracted Propoſition, and

in

in every Part of the Creation; at leaſt, in their Reaſonings about the Cauſes of Natural Things, they did not take much Pains to ſhew it. When *Galen* was to give an Account of Viſion, in his Books (*y*) *de Uſu Partium*, becauſe he had Occaſion to uſe ſome few Geometrical Terms, as *Cone*, *Axis*, *Triangle*, and the like; he makes a long Excuſe, and tells a tedious Story of a Dæmon which appear'd to him, and commanded him to write what he did; and all this, leſt the Phyſicians of that Age ſhould think he Conjur'd, and ſo take a Prejudice againſt all he ſaid. This ſhews, that in *Galen*'s Time at leaſt, there was little Correſpondence between Mathematical and Phyſical Sciences, and that Mankind did not believe there was ſo intimate a Relation between them as it is now generally known there is. Many a Man that cannot demonſtrate any one ſingle Propoſition in *Euclid*, takes it now for granted, that Geometry is of infinite Uſe to a Philoſopher; and it is believed now upon Truſt, becauſe it is become an Axiom amongſt the Learned in theſe Matters. And if it had been ſo received in *Galen*'s Time, or by thoſe more Ancient Authors whom *Galen* and his Contemporaries followed, or pretended at leaſt to follow, as their Patterns; ſuch as *Hippocrates*,

(*y*) *De U.P.* l. x. c. 12, 13, 14.

pocrates, whom all Sides reverenced, *Herophilus*, *Eraſiſtratus*, *Aſclepiades*, and ſeveral more, there would have been no need of any Excuſes for what he was doing; ſince his Readers being accuſtomed to ſuch ſort of Reaſonings, would either readily have underſtood them, or acquieſced in them as legitimate Ways of Proof. If Three or Four Mathematical Terms were ſo affrighting, how would thoſe learned Diſcourſes of *Steno* and *Croone*, concerning Muſcular Motion, have moved them? How much would they have been amazed at ſuch minute Calculations of the Motive-ſtrength of all the Muſcles in the ſeveral general ſorts of Animals, as require great Skill in Geometry, even to underſtand them, which are made by *Borellus*, in his Diſcourſes *of the Motion of Animals*? It is not enough, in this Caſe, to quote a Saying or two out of ſome great Man amongſt the Ancients; or to tell us, that *Plato* ſaid, long ago, *That God Geometrizes in all his Works*; as long as no Man can produce one Ancient Eſſay upon any Part of Phyſiology, where Mathematical Ratiocinations were introduced to ſalve thoſe *Phænomena* of Natural Things, upon which it was poſſible to talk plauſibly without their Help. At leaſt, it is certain, That they contented themſelves with general

Theories, without entring into minute Diſquiſitions into the ſeveral Varieties of Things, as is evident in the two Caſes already alledged, *of Viſion* and *Muſcular Motion.*

Now as this Method of Philoſophizing laid down above, is right, ſo it is eaſie to prove, that it has been carefully followed by Modern Philoſophers. My Lord *Bacon* was the firſt Great Man who took much pains to convince the World that they had hitherto been in a wrong Path, and that Nature her ſelf, rather than her Secretaries, was to be addreſſed to by thoſe who were deſirous to know much of her Mind. Monſieur *Des Cartes*, who came ſoon after, did not perfectly tread in his Steps, ſince he was for doing too great a part of his Work in his Cloſet, concluding too ſoon, before he had made Experiments enough; but then to a vaſt Genius he joined exquiſite Skill in Geometry, and working upon Intelligible Principles in an Intelligible Manner, though he very often failed of one part of his End, namely, a right Explication of the *Phænomena* of Nature; yet by marrying Geometry and Phyſics together, he put the World in Hopes of a Maſculine Off-ſpring in proceſs of Time, though the firſt Productions ſhould prove abortive. This was the

ſtate

ſtate of Natural Philoſophy, when thoſe great Men who, after King *Charles* II^d's Reſtoration, joined in a Body, called by that Prince himſelf, the *ROYAL SOCIETY*, went on with the Deſign; they made it their Buſineſs to ſet their Members a work to collect a perfect Hiſtory of Nature, in order to eſtabliſh thereupon a Body of Phyſics. What has been done towards it by the Members of that Illuſtrious Body, will be evident to thoſe who conſider that *Boyle*, *Barrow*, *Newton*, *Huygens*, *Malpighius*, *Leeuwenhoek*, *Willughby*, *Willis*, and abundance more already named amongſt the great Advancers of real Learning, have belonged to it: If it ſhall be thought too tedious an Undertaking, to examine all their Writings, Mr. *Boyle*'s *Works*, Monſieur *Le Clerc*'s *Phyſics*, any one good *Syſtem of the* Carteſian *Philoſophy*, Monſieur *Rohault*'s for Inſtance, or to comprehend all under one, a Book intituled, *Philoſophia Vetus & Nova ad Uſum Scholæ accommodata*, may be conſulted, and then there will be no difficulty to determine of which Side the Verdict ought to be given; in the laſt Book eſpecially it is evident how very little the Ancients did in all Parts of Natural Philoſophy, and what a great Compaſs it at preſent takes, ſince it makes the Compariſon I all along appeal to.

Thus, it ſeems to me to be ſufficiently plain, That the Ancients Knowledge in all Matters relating to *Mathematics* and *Phyſics*, was incomparably inferior to that of the Moderns. Theſe are Subjects, many of them at leaſt, which require great Intenſeneſs of Thought, great Strength and Clearneſs of Imagination, even only to underſtand them; how much more then to invent them? The Ancient *Orators*, who ſpoke ſo great things in Praiſe of *Eloquence*, who make it ſo very hard a thing to be an Orator, had little or no Notion of the Difficulty of theſe Sciences; the *Romans* eſpecially, who deſpiſed what they did not underſtand, and who did not without ſome Indignation learn of a People whom themſelves had conquered. But if they could have conceived what a Force of Genius is required to invent ſuch Propoſitions as are to be found in the Writings of their own Mathematicians, and of the Modern Geometers and Philoſophers, they would ſoon have acknowledged that there was need of as great at leaſt, if not greater Strength of Parts and Application to do very conſiderable things in theſe Sciences, as in their own admired Eloquence, which was never more artfully employed than in commending it ſelf: The Panegyrics which they made upon

Geometry,

Geometry, were rather Marks of their Pedantry, than of their Skill; *Plato* and *Pythagoras* admired them, and therefore they did so too, out of a blind Reverence to those great Names. Otherwise, amongst those numerous Commendations which are given to *Archimedes*, some would have been spent upon the many noble Theorems which he discovered, and not almost all upon the Engines wherewith he baffled *Marcellus* at the Siege of *Syracuse*. The Proposition, *That the Superficies of a Sphere is equal to the Area's of Four of its greatest Circles*, which is one of the most wonderful Inventions that was ever found in Geometry, shews him to have been a much greater Man, than all that is said of him by the *Roman* or *Greek* Historians. Had Experimental Philosophy been anciently brought upon the Stage, had Geometry been solemnly and generally applied to the Mechanism of Nature, and not solely made use of to instruct Men in the Art of Reasoning, and even that too, not very frequently neither, the Moderns would not have had so great Reason to boast as now they have: For these are things which come under Ocular Demonstration, which do not depend upon the Fancies of Men for their Approbation, as Oratory and Poetry often

do. So that one may not only in general ſay, that the Ancients are out-done by the Moderns in theſe Matters, but alſo aſſign moſt of the Particulars, and determine the Proportion wherein and how far they have been exceeded, and ſhew the ſeveral Steps whereby this ſort of Learning has from Age to Age received Improvement; which ends Diſputes and ſatisfies the Underſtanding at once.

CHAP. XXVIII.

Of the Philological Learning of the Moderns.

HItherto, in the main, I pleaſe my ſelf, that there cannot be much ſaid againſt what I have aſſerted, though I have all along taken care not to ſpeak too poſitively, where I found that it was not an eaſie thing to vindicate every Propoſition without entring into a Controverſie, which would bear plauſible things on both Sides, and ſo might be run out into a multitude of Words, which in Matters of this kind are very tireſome. But there are other Parts of Learning ſtill behind,

hind, where the bare offering to compare the Moderns to the Ancients, may ſeem a Paradox; where the ſubject Matter is entirely ancient, and is chiefly, if not altogether contained in Books that were written before the Ancient Learning ſuffered much Decay.

Under this Head *Philology* and *Divinity* may very properly be ranked. I place *Divinity* laſt, to avoid Repetition; becauſe what I have to ſay concerning Modern *Philology*, will ſtrengthen many things that may be urged in the Behalf of Modern *Divinity* as compared with the Ancient.

In ſpeaking of the Extent and Excellency of the *Philological Learning* of the Moderns within theſe laſt CC Years, I would not be miſ-underſtood. For the Queſtion is not, whether any Modern Critic has underſtood *Plato* or *Ariſtotle*, *Homer* or *Pindar*, as well as they did themſelves, or even ſo well as they were underſtood by the Age in which they wrote, for that were ridiculous; but whether Modern Induſtry may not have been able to diſcover a great many Miſtakes in the Aſſertions of the Ancients about Matters not done in their own Times, but ſeveral Ages before they were born. For the Ancients did not live all in one Age;

and though they appear all under one Denomination, and ſo as it were upon a Level, like things ſeen at a vaſt Diſtance, to us who are very remote from the youngeſt of them; yet, upon a nearer View, they will be found exceedingly remote ſome from others; and ſo as liable to Miſtakes, when they talk of Matters not tranſacted in their own Times, as we are when we reaſon of Matters of Fact, which were acted in the Reign of *William the Conqueror*. Wherefore, if one reflects upon the Alteration which Printing has introduced into the State of Learning, when every Book once printed, becomes, in a manner, out of danger of being loſt, or hurt by Copiers; and that Books may be compar'd, examin'd and canvaſs'd with much more eaſe than they could before; it will not ſeem ridiculous to ſay, That *Joſeph Scaliger*, *Iſaac Caſaubon*, *Salmaſius*, *Henricus Valeſius*, *Selden*, *Uſher*, *Bochart*, and other Philologers of their Stamp, may have had a very comprehenſive View of Antiquity, ſuch a one as Strangers to thoſe Matters, can have no Idea of; nay, a much greater than, taken all together, any one of the Ancients themſelves ever had, or indeed, could have. *Demoſthenes* and *Ariſtophanes* knew the State of their own Times better than *Caſaubon* or *Salmaſius*:

maſius : But it is a queſtion whether *Boëthius* or *Sidonius Apollinarius* knew the State of *Demoſthenes*'s Time ſo well ; yet theſe alſo are Ancients to us, and have left behind them Writings of a very eſtimable Value. Literary Commerce could not anciently be ſo frequent as now it is, though the *Roman* Empire made it more eaſie than otherwiſe it could have been.

In *Eccleſiaſtical Antiquity* this can be more fully proved than it can in *Civil* ; becauſe Monuments of that Kind are more numerous, and have been better preſerved. How widely were the *Greek* Writers, many times miſtaken, when they gave an Account of the Affairs of the *Latin* Churches. And how imperfect, many times, were the Accounts which the *Weſtern* Churches had of Things of the greateſt Moment, that had been determined in the *Eaſt* ? Though the Council of *Nice* was Oecumenical, yet the *African* Churches knew ſo little of its Canons above $\overline{L}$ Years after it was held, that the Biſhops of *Rome* impoſed Canons made in another Council, held ſeveral Years after, in another Place, upon them, as Canons made in the Council of *Nice* : Yet they were all, at that time, under one common Government, and theſe things were

were acknowledged by all Sides to be of Eternal Concernment. The ſame Negligence, if not greater, is diſcernible in Matters which were ſtudied, rather as Recreation and Diverſion, than as neceſſary Buſineſs. How many of the Ancients buſied themſelves about Examining into the Antiquities of ſeveral Nations, eſpecially after the *Old Teſtament* was tranſlated into *Greek*? Yet, how few of them underſtood the Languages of thoſe Countries of which they diſputed? There were but Two of the Ancient Fathers, that we know of, that pretended to Learning, who underſtood *Hebrew* accurately; *Origen*, and St. *Hierom*: And how well St. *Hierom* underſtood it, is now certainly known; not like the *Lightfoot's*, the *Buxtorf's*, the *Druſius's*, and the *Cappell's* of the preſent Age, one may be very well aſſured: The other *Oriental* Languages, even theſe Inquiſitive Fathers knew little or nothing of. To how good Purpoſe they have been cultivated by the Moderns, the Writings of *Selden*, *Bochart*, *Pocock*, and ſeveral others, do abundantly declare. When *Pocock* and *Golius* went into the *Eaſt*, to bring away their Learning, *they* went to excellent Purpoſe indeed. The *Bodleyan* and *Leyden* Libraries can witneſs what vaſt Heaps of

Eaſtern

Eaſtern MSS. have been brought, by ſuch Men as theſe, into *Europe*. One would think I were drawing up a *Catalogue*, not writing of a *Diſcourſe*, if I ſhould enumerate the Books which have been printed about the *Oriental* Learning, within theſe laſt LXX Years: And how much they have enlightned all manner of Antiquity, is eaſie to tell.

How clearly has the *Old Chronology* and *Geography* been ſtated by Modern Critics and Philologers; and the Miſtakes and Careleſneſs of many Writers detected, who were eſteemed Authentic even in the Times wherein they lived? *Selden* and *Bochart*, to name no more at preſent, have plainly proved, that all the Ancient *Greek* Antiquaries were not near ſo well acquainted with the Originals of that *Mythology*, which then made up a good part of their Religion, as well as of their Learning, as they are known at preſent, ſince the Languages of thoſe Countries, from whence moſt of thoſe Rites and Stories took their Original, have been carefully examined, and critically ſtudied. Is it not a very odd thing, that of ſo many as have written of the *Pyramids*, there ſhould not be one exact Account of them, Ancient nor Modern, till Mr. *Greaves* deſcribed them? They

They were admired formerly, as much as now (z); reckoned amongſt the Seven Wonders of the World; and mentioned, from *Herodotus*'s Time, downwards, by all that gave any Account of *Ægypt*: Yet moſt Men copied after *Herodotus*; and many of the reſt, who did not, ſpoke by gueſs. None of the extant Ancient Authors was ſo Exact as Mr. *Sandys*, who wanted nothing but Mathematical Skill, to have left nothing for Mr. *Greaves*, who came after him, to do. This is an eminent Inſtance, whereby we may give a certain Judgment of the Hiſtorical Exactneſs of the Ancients, compared to that of the Moderns. It may be improved to conſiderable Purpoſes; at leaſt, it is of great Uſe to juſtifie thoſe Modern Writers, who have, with great freedom, accuſed ſome of the greateſt of the Ancients, of Careleſneſs in their Accounts of Civil Occurrences, as well as of Natural Rarities; and who have dared to believe their own Reaſon, againſt the poſitive Evidence of an old Hiſtorian, in Matters wherein one would think that he had greater Opportunities of knowing the certain Truth, than any Man that has lived for ſeveral Ages.

(z) *Barbara Pyramidum ſileat miracula Memphis.* Martial.

But here I expect it ſhould be objected, That this is not to be eſteemed as a Part of

of Real Learning. To pore upon old MSS. to compare various Readings; to turn over *Gloſſaries*, and old *Scholia* upon Ancient Hiſtorians, Orators and Poets; to be minutely critical in all the little Faſhions of the Ancient *Greeks* and *Romans*, the Memory whereof was, in a manner, loſt within $\overline{L}$ or a $\overline{C}$ Years after they had been in uſe; may be good Arguments of a Man's Induſtry, and Willingneſs to drudge; but ſeem to ſignifie little to denominate him a great Genius, or one who was able to do conſiderable Things himſelf.

The Objection is ſpecious enough, and the Indiſcretions of many Modern Commentators have given but too much Colour for it; which has, in our Nation eſpecially, been riveted in Men's Minds, more, perhaps, than in any other learned Nation in *Europe*: Though in Enquiries into the remoteſt Antiquities of the oldeſt Nations, perhaps no People have done near ſo much as ſome learned *Engliſhmen*. But this Objection lies chiefly againſt the Men, not the Knowledge, the Extent whereof it is only my Buſineſs to enquire into; and yet, even there too, it is without Ground: For, whoever will be at the pains to reflect upon the vaſt Extent of the various Knowledge which ſuch

ſuch Men as thoſe I named before have gathered together, which they were able to produce to ſuch excellent Purpoſes in their Writings, muſt confeſs that their *Genius's* were little, if at all, inferior to their *Memories*; thoſe among them, eſpecially, who have buſied themſelves in reſtoring corrupted Places of Ancient Authors. There are Thouſands of Corrections and Cenſures upon Authors to be found in the Annotations of Modern Critics, which required more Fineneſs of Thought, and Happineſs of Invention, than, perhaps, Twenty ſuch Volumes as thoſe were, upon which theſe very Criticiſms were made. For though, generally ſpeaking, good Copies are abſolutely neceſſary; though the Critic himſelf ought to have a perfect Command of the Language and particular Stile of his Author, ſhould have a clear Idea of the Way and Humour of the Age in which he wrote; many of which things require great Sagacity, as well as great Induſtry; yet there is a peculiar Quickneſs in diſcerning what is proper to the Paſſage then to be corrected, in diſtinguiſhing all the particular Circumſtances neceſſary to be obſerved, and thoſe, perhaps, very numerous; which often raiſe a judicious Critic as much above the Author upon whom he

he tries his Skill, as he that diſcerns another Man's Thoughts, is therein greater than he that thinks. And the Objection that is commonly made againſt Editors of old Books, That every Man cries up his own Author, beyond all that have ever written upon that Subject, or in that Way, will rarely hold of truly great Critics, when they paſs their Judgments, and employ their Thoughts upon indifferent Books; ſince ſome have taken as much pains, in their Critical Annotations (*a*), to expoſe Authors who have had the good luck to be exceedingly commended by learned Men, as ever others did to praiſe them.

(*a*) *Vid.* Petri Cunæi *Animadverſiones in Nonni Dionyſiaca.*

Soon after Learning was reſtored, when Copies of Books, by Printing, were pretty well multiplied, *Criticiſm* began; which firſt was exerciſed in ſetting out Correct Editions of Ancient Books; Men being forced to try to mend the Copies of Books, which they ſaw were ſo negligently written. It ſoon became the Faſhionable Learning; and after *Eraſmus*, *Budæus*, *Beatus Rhenanus*, and *Turnebus* had diſperſed that ſort of Knowledge through *England*, *France*, *Germany*, and the *Low-Countries*, which before had been kept altogether amongſt the *Italians*, it was, for about CXX Years, cultivated with very

very great Care: And if ſince it has been at a ſtand, it has not been becauſe the Parts of Men are ſunk, but becauſe the Subject is, in a manner exhauſted; or at leaſt, ſo far drained, that it requires more Labour, and a greater Force of Genius, now to gather good Gleanings, than formerly to bring home a plentiful Harveſt; and yet this Age has produced Men who, in the laſt, might have been reckon'd with the *Scaligers*, and the *Lipſius's*. It is not very long ſince *Holſtenius*, *Bochart*, and *Gerhard Voſſius*, died; but if they will not be allowed to have been of our Age, yet *Iſaac Voſſius*, *Nicolas Heinſius*, *Frederic Gronovius*, *Ezekiel Spanheym*, and *Grævius*, may come in; the two laſt of whom are ſtill alive, and the others died but a few Years ſince. *England*, perhaps, cannot ſhew a proportionable Stock of Critics of this Stamp. In *Henry* VIII^th's Time there was an admirable Set of Philologers in the Nation; though there is a great difference to be made between a good Critic, and a Man that writes *Latin* as eaſily and correctly as his Mother-Tongue. Sir *Thomas More*, Cardinal *Pole*, *Linacre*, *Collet*, *Cheek*, *Aſcham*, and ſeveral more, often to be met with in *Eraſmus's Epiſtles*, wrote *Latin* with a Purity that no *Italian* needed then

to

to have been aſhamed of. Let the Subject they wrote upon have been what it would, one may ſee by the Purity of their Stile, that they wrote in a Language which expreſs'd their Thoughts without Conſtraint. A great Familiarity with the politeſt Authors of Antiquity, was what theſe Men valued themſelves much upon; and it was then the Delight of the learned Men of this Nation, as much as their Diſputes in Religion would give them leave. Though this ſeemed to ſink by degrees, yet that afterwards Critical Skill in Antiquity was valued and purſued by our greateſt Scholars, will not be queſtioned by thoſe who conſider that Sir *Henry Savile*, Mr. *Camden*, Archbiſhop *Uſher*, Mr. *Selden*, Sir *John Marſham*, Mr. *Gataker* (not to mention ſome now alive, whoſe Fame will one day equal that of the *Salmaſius's* and the *Grotius's* of other Nations) were the Glories of our Country, as well as of the Age they lived in.

In ſhort, to conclude this Argument: Though Philological and Critical Learning has been generally accuſed of Pedantry, becauſe it has ſometimes been purſued by Men who ſeemed to value themſelves upon Abundance of Quotations of *Greek* and *Latin*, and a vain Oſtentation

of diffuſed Reading, without any thing elſe in their Writings to recommend them; yet the Difficulty that there is, to do any thing conſiderable in it, joined with the great Advantages which thereby have accrued to the Commonwealth of Learning, have made this no mean Head whereon to commend the great *Sagacity*, as well as *Induſtry* of theſe later Ages.

CHAP. XXIX.

Of the Theological Learning of the Moderns.

TO *Philology*, I before added *Divinity*, and, as I hope to prove, not without Reaſon. As they relate to our Queſtion, they both agree in this, that the Subject of them both is truly Ancient; and that it is impoſſible to become truly excellent in either of them, without a familiar Converſation with thoſe Original Books, to which the great Maſters of both theſe Sciences do conſtantly appeal. Our *Bleſſed Saviour* did not reveal his Law by halves to his Apoſtles, nor is the *New Teſtament* an imperfect Rule of Faith:

Faith: The *Old Teſtament* likewiſe has conſtantly been at hand; and the *Jews* have, ever ſince their Return from the *Babyloniſh* Captivity, been ſcrupulouſly ſollicitous to deliver the *Genuine Hebrew and Chaldee Text* of the *Old Teſtament* pure and uncorrupted, to ſucceeding Ages. Yet, though theſe, together with the Writings of the *Greek* and *Latin* Fathers, be Inſtruments without which no Divine can work; and though it ſeems almoſt impoſſible that any Man ſhould be able to perform all the Duties of his Profeſſion, that are incumbent upon him as a Scholar, without a competent Exactneſs in all theſe Things; yet it is very poſſible that Modern Divines, who make uſe of theſe Inſtruments, may be better Work-men than thoſe Ancient Fathers, who furniſhed them with the greateſt part.

Now, that there may be no Diſputes about Terms miſ-underſtood, it will be neceſſary to explain what is here meant by *a Perfect Divine*; that is to ſay, ſuch an one as may be a Standard whereon to found a Compariſon. *A Perfect Divine* ought to underſtand the Text of the *Old* and *New Teſtament* ſo exactly, as to have a clear Notion of every Book in general, and of the Grammatical Meaning of every Text in particular; that ſo he may be

able to reconcile all Difficulties, and anſwer all Objections that may ariſe: He ought to underſtand the State of the Church, as to its Doctrine and Diſcipline, in its ſeveral Ages: He ought to be thoroughly vers'd in all the General Notions of *Ethics*, taken in their utmoſt Extent, to enable him to reſolve ſuch Caſes of Conſcience as may occurr, with Judgment and Satisfaction: He ought to be a Maſter of all the Topics of Perſuaſion which can ever lie in his Way, that ſo his Exhortations may pleaſe and convince thoſe whom he deſigns to perſuade at the ſame time: Laſt of all, He ought to be able to Anſwer all the Objections which may be, or have been raiſed againſt the Doctrine and Diſcipline of the Church, by its open or ſecret Enemies. Theſe ſeem to be the neceſſary Qualifications of a *Perfect Divine*; it may, perhaps be queſtion'd whether any Man did ever fully come up to this Deſcription; neither is it neceſſary to the preſent Purpoſe that any ſhould, ſince the Queſtion will be as perfectly anſwered, by determining who have come the neareſt to it, as by aſſigning any particular Perſon that ever quite reach'd up to it. For theſe Differences do not lie in a Mathematical Point, and I do not deſire that any Diſputable Things ſhould

ever

ever be brought under Debate. One Qualification, indeed, and that the moſt valuable of all, I have omitted; but that relates not to the preſent Controverſie, ſince we are not now enquiring who were the Holieſt Men, but who were the Greateſt Maſters of their Profeſſions, the Ancient Fathers, or the Modern Divines.

The firſt thing required, is, *an Exact Knowledge of the Text of the Old and New Teſtament.* In Underſtanding the *Old*, even the LXX Interpreters themſelves have often failed, as has been abundantly proved by Modern Critics. The Copies they uſed were ſometimes faulty; and ſince they did not mend thoſe Faults, it is more than probable they did not ſee them. It has been obſerved already, That ſcarce any of the Fathers underſtood *Hebrew* beſides *Origen* and St. *Hierom*, who therefore were followed as Oracles by many of their Succeſſors; even that alone will not ſuffice, becauſe there are no other Books beſides the *Old Teſtament* written in that Language: For which Reaſon, *Syriac*, *Chaldee*, *Samaritan* and *Arabic*, have been ſtudied by Modern Critics; not to mention the Writings of the *Rabbins* and the *Talmudiſts*, to which the Ancients were utter Strangers. If we come to Particulars; Who of the An-

cients ever unravelled the Chronology of the *Old Teſtament*, like Archbiſhop *Uſher*, and Sir *John Marſham*? Though *Euſebius*'s *Chronicon* is a ſtanding Evidence how much he, and *Julius Africanus* before him, endeavoured to clear that Matter, which was of ſo great Uſe to confound the vain Pretences to Antiquity of thoſe other Nations that were ſo unwilling to yield to the *Jews* in this Particular. Who has ever given ſo rational and ſo intelligible an Account of the Deſign and Intent of the ſeveral Parts of the Ceremonial Law, as Dr. *Spencer*? Who has acquainted the World with the Geography of *Geneſis*, or the Natural Hiſtory of the Bible, like Monſieur *Bochart*? Theſe are much harder things than the lengthning of a fine-ſpun Allegory, or than a few Moral Reflections, which conſtitute the greateſt part of the Ancient Comments. But the *New Teſtament*, it will be ſaid, was written in a Time that was nearer at hand; and ſo was certainly better underſtood. Without doubt it was, by the Firſt Fathers; for which Reaſon their Interpretations (*b*) and their Reaſonings, if we could have recovered, many of them would have been of infinite value: But when once the Synagogue and the Church broke off their Correſpondence, when once

(*b*) See Mr. *Dodwell*'s Two Firſt Diſſertations upon St. *Irenæus*.

once the immediate Reaſons of the firſt Eſtabliſhment of many Parts of the Chriſtian Diſcipline, and of great numbers of Alluſions to *Jewiſh* Cuſtoms and Traditions which are to be found in the *New Teſtament*, could only be known by Study and Reading, all which the firſt Chriſtians knew without Study, as we do the Manners and Faſhions of our own Age and Country, then the ancient Interpretations of the *New Teſtament* began to fail; and though ſome of them, St. *Chryſoſtom*'s and *Theodoret*'s eſpecially, are in themſelves, ſetting Antiquity aſide, truly valuable; yet, for want of ſuch a diffuſed Knowledge of Eaſtern Antiquities as was neceſſary, and which only could be had by a long Converſation with the Books that are written in thoſe Languages, theſe admirable Commentators ſeem in ſeveral Places not to have found out the true Original of many things in the *New Teſtament* which have been diſcovered ſince.

To the next thing, which is Skill in *Eccleſiaſtical Antiquity*, I have ſpoken already. The *Third* and the *Fourth*, which relate to a Divine, as a *Caſuiſt*, or as a *Preacher*, may be conſidered of together; wherein we of the preſent Age may, without Vanity, boaſt of having the beſt

Books, and of them too the greateſt Numbers, upon theſe Subjects, written in our own Language, and by our own Countrey-men, of any People in the World. The Excellency of a *Caſuiſt*, is, to give ſuch Reſolutions of Doubts and Queſtions propoſed to him, as may both ſuit with the particular Circumſtances of the Perſon who deſires Satisfaction; and alſo may be perfectly agreeable to the Law of God. A *Preacher* then ſeems to perform his Office beſt, when he can at once inſtruct and move his Auditors; can raiſe their Paſſions, and inform their Judgment; that ſo every Sermon upon a Doctrinal Head, may contain the Solution of a Caſe of Conſcience. For the firſt of theſe; It is certain, that many of the ableſt of the Ancient Fathers were very excellent Caſuiſts; as, indeed, every Man who has a right Judgment, an honeſt Mind, and a thorough Acquaintance with the Deſign of our *Bleſſed Saviour*, revealed in the Goſpel, muſt of neceſſity be. And if, at this diſtance, many of their Deciſions ſeem over-ſevere, there is as great, at leaſt, if not greater Reaſon to ſuſpect, that the Complaints now-a-days raiſed againſt them, may ariſe from our Degeneracy, as from their unwarrantable Strictneſs. But for the *Ancient* Way of *Preaching*, there

there is much more to be ſaid. The great Handle by which an Hearer is enabled to carry along with him a Preacher's Arguments, is, Method and Order. Herein the Ancient Homiliſts are exceedingly defective: Flights of Rhetoric, which are more or leſs judiciouſly applied, according to the Abilities of the ſeveral Preachers, make up the greateſt part of their Diſcourſes: And, after *Origen*, moſt Men buſied themſelves in giving the People Allegorical Interpretations of Paſſages of Scriptures; which were infinite, according to the Fancies of thoſe that uſed them. St. *Chryſoſtom*, indeed, reformed this Cuſtom in the *Greek* Church: His Authority went a great way; and his Interpretations were almoſt always Literal, and, ſuitably to his vaſt Genius, very Judicious. But he that conſiders *Preaching*, as an Art capable of Rules and Improvement, will find a mighty difference between a Juſt, Methodical Diſcourſe, built upon a proper Text of Scripture, wherein, after the Text is carefully explained, ſome one Duty or Doctrine of Religion, thence ariſing, is plainly proved by juſt and ſolid Arguments, from which ſuch Topics of Perſuaſion are drawn at laſt, as are the moſt likely to raiſe ſuch an Affection, and engage thoſe Paſſions in the Minds of

of all the Auditors, as will pleaſe and move Good Men, and ſilence, at leaſt, if not perſuade the Bad; and between a Looſe, Paraphraſtical Explication of a large Portion of Scripture, ending, at laſt, in a general Ethical Harangue, which is the uſual Method of moſt of St. *Chryſoſtom*'s Homilies. Whereas by the former Method, ſtrictly followed, many of our *Engliſh* Sermons, eſpecially of the Great Men of our own Church, ſince the Reſtauration, are Solutions of the moſt difficult Queſtions in Divinity, and juſt Diſcourſes upon the ſeveral Duties of the Chriſtian Life; and this with ſo much Smoothneſs, ſo great Beauty of Language, and ſuch a juſt Application of the greateſt Ornaments of True and Maſculine Eloquence, to Things at firſt View, oftentimes, the moſt oppoſite, that the Hearer takes a Pleaſure to think, that then he is moſt inſtructed, when he is beſt pleaſed. The Want of this Method in the Ancient Homiliſts, is the great Reaſon why they are ſo little read. It is not becauſe they are hard to be underſtood; for an indifferent Skill in *Greek* and *Latin* is ſufficient to go through with the greateſt part of them: But Want of Method, great Multiplicity of Words, and frequent Repetitions, tire out moſt Readers: They know

not

not how far they are got, but by the Number of the Leaves; and ſo having no Reſt for their Minds to lean upon, when once they begin to be weary, they are ſoon diſguſted. If therefore theſe Inconveniences are, in a great meaſure, avoided by Modern Preachers, their Sermons are, in their kind, more perfect, though the Matter which both of them work upon be the ſame. And if theſe Things be the Effects of great Study, and of an exact Judgment, at leaſt in thoſe who contributed the moſt to ſo great an Alteration; then this alſo may come in as a proper Evidence of the Encreaſe of Modern Learning; and with much more Reaſon than thoſe Things which only tend to divert a Man, when he is unfit for ſerious Buſineſs. Who thoſe are who have ſucceeded the *Hookers*, the *Chillingworths*, the *Sanderſons*, and the *Hammonds* of the laſt Age, to ſuch excellent purpoſe for the preſent, and thoſe that ſhall come after, I need not name; but ſhall rather conclude with that Saying in *Velleius Paterculus*, upon a not much unlike Occaſion; *Vivorum ut admiratio magna, ita cenſura difficilis eſt.*

The laſt thing which I mention'd, as neceſſary for a Divine, is, *To be able to Anſwer ſuch Objections as have been, or may be*

be raiſed againſt the Chriſtian Faith. Of the Controverſies which have ariſen among Chriſtians, and the Adverſaries with whom they have been obliged to engage, there are in the preſent Account two Sorts; thoſe which the Ancient Fathers were concerned with, and thoſe that have appeared ſince. Of the latter it may, poſſibly, ſeem hard to paſs a Judgment, ſince one cannot well ſay how Men would have managed Diſputes which never came in their way. The former may alſo be ſubdivided into thoſe which have been renewed in our own Time; and thoſe of which we have only the Memory in Ancient Books. So that one is rather to conſider how Controverſies were handled in general, and ſo inferr how theſe Modern ones, which have only engaged the Wits and Paſſions of later Ages, would have been managed, had there been an Occaſion.

It is evident, that in their firſt Diſputes with the *Gentiles*, the old Apologiſts did with great Accuracy expoſe both the Follies of their Worſhip, and the Vanity of their Philoſophy: They opened the Chriſtian Religion with great Clearneſs; they ſhewed the Grounds of their Belief, and proved its Reaſonableneſs upon ſuch Principles as were both ſolid in themſelves, and

and ſuitable to the Ways of Arguing, and the peculiar Notions of all their ſeveral Adverſaries. Afterwards, when the Myſteries of the Chriſtian Religion were ſo eagerly debated, in Ages wherein they feared no Foreign Force, the Men of Learning ſhewed as great Subtilty in their Arguments, and as great Dexterity in ſhifting off the Sophiſms of their Opponents, as have ever been ſhewed in later Times. So that thus far the Moderns ſeem to have little Advantage: And, indeed, the Books that were written by the Ancients in Defence of the Chriſtian Religion, were very admirable: But in the Controverſies that were managed amongſt themſelves, there ſeem to be, many times, as viſible Signs of too great a Subtilty, as of a judicious Underſtanding of the Point in hand: They uſed little Method in ranging their Arguments, and rarely ſtated the Queſtion in plain and ſhort Terms: This made them often multiply Words to a tedious length, which both tired the Readers, and darkned the Diſpute. That all theſe Faults are too often found in the Polemical Diſcourſes of the Moderns, is moſt certain: But Compariſons are always laid between the ableſt Men of both Sides. The Modern Defences of the Doctrines of the *Trinity*, and the *Incarnation*, may

may be compared with the old Defences of the ſame Doctrines againſt the *Arians*, and other Ancient Heretics. If Heretics may be compared with Heretics, there is no queſtion but the *Socinians* are much abler Diſputants than the *Arians* and *Eunomians* were of old: They have collected every thing that can look like an Argument; they have critically canvaſs'd every Text of Scripture which anciently was not ſo Grammatically underſtood as now it is, and have ſpared no Pains nor Art to wreſt every thing that, with any Shew of Reaſon, could be drawn to their Side: They have refined upon the Philoſophical Notions of God, and of his Attributes; and have taken great Care not to confound their Readers, or themſelves, with Want of Method, or a Multiplicity of Words. Such able Adverſaries have not failed of as able Opponents. And when Men of Skill manage any Diſpute, whatſoever it be, they will teach one another the Art of Reaſoning, even though beforehand they ſhould not well have underſtood it, if their Debates continue to any length. Whence alſo it has followed, that though theſe Great Men, who have defended our Faith againſt ſuch ſubtile Adverſaries, would have ſhewn their Skill equally upon any other Subject which they might have under-

undertaken; yet upon theſe Queſtions, the Truth would otherwiſe never have been ſo perfectly known.

And here it ought to be obſerved, That the Art of making Controverſies eaſie and intelligible, even though the Arguments ſhould be all the ſame that had formerly been urged, ſhews much greater Skill, and a more thorough Underſtanding of thoſe Matters, than had been diſcovered before: For, he that makes another underſtand a thing in few words, has a more clear and comprehenſive Knowledge of that thing, than another Man who uſes a great many. Such a Man's Excurſions, if he has a mind at any time to go out of the way, or to enlarge, for the eaſe of thoſe who love to have things expreſſed in an Homeletical manner, will never tire; becauſe, having his Point ſtill in view, he will take care that his Readers or Auditors ſhall always know where he is. Hence it is, that there are many Sermons in our Language, upon the moſt abſtruſe Queſtions in the Chriſtian Religion, wherein *Engliſh* Readers, who have never read Fathers nor School-men, whoſe Heads have never been filll'd with Terms of Art, and Diſtinctions, many times, without a difference, may both in few and clear Propoſitions

poſitions, know what they are to believe, and at the ſame time know how to defend it. Hereby, in all our Controverſies with *Papiſts*, *Socinians*, and *Diſſenters*, many admirable Diſcourſes have been written, wherein one ſees the Queſtion rightly ſtated, preſently brought to an Head, and accurately proved by ſuch Arguments as its particular Nature may require. It cannot be denied, but a good deal of this Methodical Exactneſs was at firſt owing to the School-men; but they are Moderns here: And if their Writings have ſome Excellencies, which the elegant Compoſures of more learned Ages want; this alſo affords us a convincing Argument, that Mankind will, in ſomething or other, be always improving; and that Men of working Heads, what Subject ſoever they handle, though they live in Times when they have none but barbarous Patterns to copy after, will do many things which politer People did not know, or elſe over-look'd.

Upon this Occaſion, I cannot but take notice, that the Moderns have made clearer and ſhorter Inſtitutions of all manner of Arts and Sciences, than any which the Ancients have left us. I have already inſtanced in the Method whereto all the Parts of Natural Hiſtory have been reduced:

duced: It is evident, That Method in all those Things, must be the Effect of a Comprehensive Knowledge of the Bodies so ranged, and of a Nice Comparison of every several Body and Animal one with another, since otherwise their mutual Differences and Agreements cannot possibly be adjusted; the same has been done in *Medics* and *Surgery*, in *Anatomy*, in *Chymistry*, in all Parts of *Physics* and *Mathematics*: How confused, many times, and always lax, are *Galen*'s Anatomical Discourses, in comparison of *Bartholin*'s, *Diemerbroek*'s, and *Gibson*'s? Monsieur *Perrault* has observed already, (*c*) that *Aristotle* expressed himself so obscurely in his *Physical Discourses*, that his Meaning is almost as variously represented, as there have been Commentators who have written upon him; whereas no Man ever doubted of the precise Meaning of the Writings of *Des Cartes* and *Rohault*, tho' all Men are not of their Opinion. In *Mathematics* the thing is yet more visible: How long and tedious are *Euclid*'s *Demonstrations*, either in *Greek*, or as they are Commented upon by *Clavius*, in Comparison of *Tacquet*'s or *Barrow*'s? *Tacquet* has made *Astronomy* intelligible, with a very little Help, which before was not to be attained without a Master, and abun-

(*c*) *Parallele des Anciens & des Modernes*, Dialog. III. pag. 251, — 257.

dance of Patience; the ſame has *Varenius* done in the *Mathematical Part of Geography*; *Tacquet*, in *Practical Geometry*, *Optics*, and *Catoptrics*. The *Doctrine* of the *Conic Sections*, in *Apollonius Pergæus*, is ſo intricate, the Demonſtrations are ſo long, and ſo perplexed, that they have uſually deterred all but Firſt-Rate Geometers: This, Penſioner *De Witt* has made ſo eaſie, in his *Elements of Curve Lines*, (*d*), that it is readily maſtered by any Man who has read the Firſt Six Books of *Euclid*. Such Abridgments ſave a great deal of Labour, and make Knowledge pleaſant to thoſe who, in the laſt Age, were ſo exceedingly frightned with the Thoughts of the Difficulty of theſe Studies, that Sir *Henry Savile* made as formal a Buſineſs of his *Prælections upon the Definitions, Axioms, and Eight Firſt Propoſitions of the Firſt Book of Euclid*, which may be thoroughly comprehended, by a Man of ordinary Parts, in Two Hours time, by the help of *Tacquet's Elements*, as a Man would now of Lectures upon the hardeſt Propoſitions, in Mr. *Newton's Mathematical Principles of Natural Philoſophy*. To theſe judicious Abridgments, the wonderful Encreaſe of this part of Knowledge, for theſe laſt LXX Years, is in a great meaſure to be attributed; and though Methodizers

(*d*) Annexed to the laſt Editions of *Des Cartes's Geometry*.

and

and Compilers of Syſtems have commonly the hard Fate to be undervalued by thoſe who have been Inventors themſelves; yet, in Mathematical Sciences, the caſe is ſomething different; for things cannot be abbreviated there, without a very exact Knowledge of the Subjects then to be abridged, and brought into one view. In *Moral*, or *Hiſtorical Diſcourſes*, an Epitomizer immediately ſees what is either in it ſelf ſuperfluous, or not to his particular Purpoſe; and ſo when he has cut it off, what remains, is in ſome ſort entire, and may be underſtood without the reſt, ſo that there is no harm done: But here that will by no means ſuffice; for the moſt verboſe Mathematicians have rarely ever ſaid any thing for Saying ſake, theirs being Subjects in which Figures of Rhetoric could have no ſort of place; but they made every Concluſion depend upon ſuch a Chain of Premiſes already proved, that if one Link were broken, the whole Chain fell in pieces; and therefore, he that would reduce thoſe Demonſtrations into a narrower Compaſs, muſt take the whole Propoſition a new in pieces, muſt turn it ſeveral ways, muſt conſider all the relations which that Line, or that Solid, has to other Lines or Solids, muſt carefully have conſidered how many ſeveral

Ways it can be generated, before he can be able to demonſtrate it by a ſhorter Method, and by other Arguments, than thoſe by which it was proved before: In ſhort, he muſt, in a manner, be able to invent the Propoſition of himſelf, before he can put it into this new Dreſs; for which Reaſon, *Tacquet*, *Barrow*, and *De Witt*, have been reckoned amongſt the principal Geometers of the Age, as well as for their other Inventions in Geometry: *Tſchirnhaus*'s *Medicina Mentis* will give a clear Idea of many things relating to this Matter.

And now, having gone through the ſeveral Parts of the Parallel which I propoſed at firſt to make, I ſhall cloſe all with Sir *William Temple*'s Words, a little altered: (*e*) 'Though *Thales*, *Pythagoras*, 'Democritus, *Hippocrates*, *Plato*, *Ariſtotle* 'and *Epicurus*, may be reckoned amongſt 'the Firſt mighty Conquerors of Ignorance, in our World; and though they 'made great Progreſſes in the ſeveral Empires of Science, yet not ſo great in very 'many Parts, as their Succeſſors have ſince 'been able to reach. Theſe have pretended to much more, than barely to learn 'what the others taught, or to remember 'what they invented; and being able to 'compaſs that it ſelf, have ſet up for Au-

(*e*) P. 30.

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'thors upon their own Stocks, and not 'contenting themſelves only with Com-'menting upon thoſe Texts, have both 'copied after former Originals already 'ſet them, and have added Originals of 'their own in many things of a much 'greater Value.'

CHAP. XXX.

Reflections upon the Reaſons of the Decay of Modern Learning, aſſign'd by Sir William Temple.

HAving therefore, as I hope, ſufficiently proved, that there has not been ſuch a Fall in Modern Learning, as Sir *William Temple* ſuppoſes, (though in many Particulars it may have fallen ſhort of, and in others not out-done the Ancient;) nay, even that, comparatively ſpeaking, the Extent of Knowledge is, at this Time, vaſtly greater than it was in former Ages; It may ſeem, perhaps, a needleſs thing to examine thoſe Reaſons which he alledges, of the Decreaſe of that, which in the groſs has ſuffered no Decay. Something, however, I ſhall ſay

to them ; becauſe if they do not prove what Sir *William Temple* deſigns, yet they will prove at leaſt, what a perfect thing Learning might have been, if it had not met with ſuch Impediments.

(*f*) P. 64, 65. The firſt Blow which he ſays (*f*) that Learning received, was by the Diſputes which aroſe about Religion in *Europe*, ſoon after the Revival of Learning in theſe Parts of the World. There is no doubt, but the Thoughts of many very able Men were taken up with thoſe Controverſies ; who, if they had turn'd them with the ſame Application to Natural or Civil Knowledge, would therein have done extraordinary things. Yet, conſidering all things, it may be juſtly queſtion'd, whether Learning may not, by theſe very Diſputes, have received either immediately, or occaſionally, a great Improvement, or at leaſt, ſuffered not any conſiderable Diminution. For, (1.) It is certain, That whatſoever relates to *Divinity* as a Science, has hereby been better ſcann'd, and more accurately underſtood and explained, than otherwiſe it would ever have been ; and, I ſuppoſe, this will be readily owned to be one of the moſt excellent Parts of Knowledge. (2.) It is a queſtion whether a great many of the chiefeſt Promoters of any Part of this Theolo-

Theological Knowledge, would, or could have done ſo great things, upon any other Subject. Oppoſition, in general, whets Men's Parts extremely; and that inward Satisfaction which a good Man takes, in thinking that he is employed upon Arguments of greateſt Concern to the Souls of Men, inſpires him with an Ardour that adds Wings to his native Alacrity; and makes him, in all ſuch Caſes, even out-doe himſelf. (3.) When different Parties are once formed, and great Numbers of Youths are conſtantly trained up to ſucceed the older Champions of their reſpective Sides; as theſe ſhall drop off, all thoſe after-Comers will not apply their Minds to Studies immediately relating to their own Profeſſions, but here and there one, as his Genius ſhall lead him, will try to excell in different Ways, for the Glory of his own Party; eſpecially if he ſees any of his Adverſaries eminently Famous before him, in thoſe things. Thus *Petavius* ſet himſelf to contradict *Joſeph Scaliger's* Books *de Emendatione Temporum*, and *Scioppius* fell upon his other Critical Writings: Whilſt *Iſaac Caſaubon* concerned himſelf only with Publiſhing and Commenting upon *Athenæus*, *Polybius*, and *Theophraſtus*, he was complemented by all Sides; but

when once he wrote againſt the Annals of Cardinal *Baronius*, he met with numerous Adverſaries; and there was ſcarce a Critic of the Church of *Rome*, for ſome time afterwards, that did not peck at ſomething or other in his other Writings. This Emulation eminently appeared in the Order of the Jeſuits, the main Deſign of whoſe Inſtitution ſeems to have been to engroſs all Learning, as well as all Politics, to themſelves; and therefore we ſee ſo many extraordinary Men amongſt them for all ſorts of things, thereby to give the World Occaſion to think, that there muſt certainly be ſomething more than ordinary in the Conſtitution of a Body, which every Day produced ſuch excellent Perſons. So that if one conſiders how far this Emulation went, which even yet is not wholly extinct, it is hard to ſay, whether Diſputes in Religion have not rather helped to encreaſe the Stock of Learning, than otherwiſe; at leaſt, one may venture to ſay, that they have not diminiſh'd it.

It is moſt certain, that the different Political Intereſts in *Europe*, have done it a mighty Kindneſs. During the Eſtabliſhment of the *Roman* Empire, one Common Intereſt guided that vaſt Body, and theſe Weſtern Kingdoms amongſt the reſt. *Rome* was

was the Center of the Learning of the Weſt, as well of their Hopes, and thither the Provinces of this Part of the World had always Reſort: Whereas now every Kingdom ſtanding upon its own Bottom, they are all mutually jealous of each others Glory, and in nothing more than in Matters of Learning in thoſe Countries where they have Opportunities to purſue it. About an $\overline{CL}$, or $\overline{CC}$ Years ſince, it was eſteemed a very honourable Thing to write a true *Ciceronian* Style: This the *Italians* pretended to keep to themſelves, and they would ſcarce allow that any Man beyond the *Alpes*, unleſs, perhaps, *Longolius*, and Cardinal *Pole*, wrote pure *Roman* Latin: This made other Nations ſtrive to equal them; and one rarely meets with a Book written at that time upon a Subject that would bear the Elegancies of Style in bad Latin. When *Critical Learning* was in faſhion, every Nation had ſome few Great Men at the ſame time, or very near it, to ſet againſt thoſe of another: *Italy* boaſted of *Carolus Sigonius*, *Fulvius Urſinus*, and *Petrus Victorius*; *France* had *Joſeph Scaliger*, *Iſaac Caſaubon*, *Cujacius*, *Pithœus*, *Briſſonius*, and ſeveral more; *Switzerland* produced *Geſner*, for that and almoſt every thing elſe; *Germany* had *Leopardus*, *Gruter*, *Putſchius*,

Putſchius, and others; the *Low Countries* had *Juſtus Lipſius*; *England* had Sir *Henry Savile*; every Country had ſome Great Men to keep up its Glory in thoſe things which then were in greateſt requeſt. In this laſt Age, *Mathematical* and *Phyſical* Sciences ſeem to have been the Darling Studies of the Learned Men of *Europe*; there alſo the ſame Emulation has been equally viſible. When *Great Britain* could ſhew ſuch Men as my Lord *Bacon*, my Lord *Napier* (the Inventor of Logarithms,) Mr. *Harriot*, Mr. *Oughtred*, and M. *Horrox*; *Holland* had *Stevinus*, who firſt found out Decimal Arithmetic, and *Snellius*; *France* could reckon up *Des Cartes*, *Merſennus*, *Fermat*, and *Gaſſendi*; *Italy* had *Galileo*, *Torricellius*, and *Cavallerius*; *Germany*, *Kepler*; and *Denmark*, not long before, *Tycho Brahe*. When afterwards the Philoſophers of *England* grew numerous, and united their Strength, *France* alſo took the Hint, and its King ſet up a *Royal Society*, to Rival ours. The Duke of *Tuſcany* had ſet up already, at *Florence*, the *Academy del Cimento*, whoſe Members employed themſelves in purſuing the ſame Methods. In *Germany*, an *Academy* of the ſame nature has been raiſed. Even *Ireland* has had its *Philoſophical Society*. From all which, ſuch Swarms of Great Men, in every

every Part of Natural and Mathematical Knowledge, have within theſe few Years appeared, that it may, perhaps, without Vanity, be believed, that if this Humour laſts much longer, and learned Men do not divert their Thoughts to Speculations of another kind, the next Age will not find much Work of this kind to do: For this ſort of Learning has ſpread where-ever Letters have had any Encouragement in *Europe*, ſo ſucceſsfully, that even the Northern Kingdoms have had their *Bartholin's*, their *Borrichius's*, their *Rudbek's*, their *Wormius's*, and their *Hevelius's*, who have put in for that Prize which the Inhabitants of warmer Climates ſeemed already in poſſeſſion of. This has occaſion'd the Writing of abundance of Books, to vindicate the Glory of every great Invention to ſome eminent Man of that Country that the Authors of thoſe Books belonged to. Which Diſputes, though many times very pedantically managed, and with an Heat miſbecoming Learned Men, yet has had this good Effect, that while ſome were zealous to ſecure the Glory of the Invention of Things already diſcovered, to their own Countries; others were equally ſollicitous to add a more undiſputed Honour to them, by new Inventions,

which

which they were ſure no Man could poſſibly challenge.

Another Reaſon of the Decay of Learning, according to Sir *William Temple* (*g*), is, the want of Protection from Great Men, and an unſatiable Thirſt after Gain, now grown the Humour of the Age. That Princes do not now delight to talk of Matters of Learning in their public Converſations, as they did about an $\overline{CL}$ Years ago, is but too evident: When Learning firſt came up, Men fanſied that every thing could be done by it, and they were charm'd with the Eloquence of its Profeſſors, who did not fail to ſet forth all its Advantages in the moſt engaging Dreſs. It was ſo very modiſh, that the Fair Sex ſeemed to believe that *Greek* and *Latin* added to their Charms; and *Plato* and *Ariſtotle* untranſlated, were frequent Ornaments of their Cloſets. One would think by the Effects, that it was a proper Way of Educating them, ſince there are no Accounts in Hiſtory of ſo many truly great Women in any one Age, as are to be found between the Years $\overline{MD}$ and $\overline{MDC}$. This Humour in both Sexes abated by degrees; and the Great Men being either diſguſted with the Labour that was requiſite to become thoroughly Learned, or with the frequent Repetitions of the ſame

(*g*) P. 67, — 71.

ſame things, Buſineſs and Diverſions took up their Thoughts, as they had done formerly. But yet, in the main, the Learned Men of this Age have not ſo much reaſon to think themſelves ill uſed, as it is commonly thought. What by Fellowſhips of Colleges, and Eccleſiaſtical Preferments, here in *England*; and by the ſame ſort of Preferments, added to the Allowances in ſeveral Monaſtical Orders, in Popiſh Countries, there are very fair Settlements for Men of Studious and Sedentary Lives; and innumerable Inſtances can be given, in theſe two laſt Ages, of the excellent Uſes which great Numbers of Men have made of them: So that every ſuch Preferment beſtowed upon any learned Man, upon the ſcore of his Merit, by Princes, or Great Men, in whoſe Gift they were, is an Inſtance of their Beneficence to Men of Letters: And whether a Man is conſidered by a Penſion out of a Princes Exchequer, or by the Collation of a Preferment in that Prince's Gift, it is, to a Man who enjoys it, the ſelf-ſame thing. Neither have Examples been wanting in the preſent Age, of Sovereign Princes who have made it as much their Buſineſs to encourage Learned Men, as, perhaps, in any of the former, that are ſo much commended for that very Reaſon. *Chriſtina* Queen

Queen of *Sweden*, who, in other reſpects, was by no means the Glory of her Sex, did, whilſt ſhe liv'd at *Stockholm*, ſend for the learnedeſt Men of *Europe* to come to her, that ſhe might converſe with them about thoſe things wherein they were moſt excellent. *Des Cartes*, *Salmaſius*, *Bochart*, *Nicolas Heinſius*, *Iſaac Voſſius*, were of that number: And her Profuſeneſs, which knew no bounds, was ſcarce in any thing more viſible, than in her Marks of Reſpect to Men of Letters. Afterwards, when ſhe ſetled at *Rome*, her Palace was always an Academy of the *Virtuoſi* of that City. The preſent *French* King, whilſt Monſieur *Colbert* liv'd, took a ſingular Pride in ſending Preſents to the moſt celebrated Scholars of *Europe*; without regarding whether they were his own Subjects, or of his own Religion, or no. This he did purely *for his Glory*, the Prin-
(*h*) P. 68. ciple which Sir *William Temple* (*h*) ſo exceedingly applauds. His own Proteſtant Subjects, before he involved them in one Common Ruine, taſted of his Liberality of that kind, upon Occaſion: And whatſoever his other Actions are, or have been, yet his extraordinary Care to breed up his Son to Learning, his erecting of Academies for Arts and Sciences at *Paris*, and his frequent Boun-

ties

ties to Men of Letters, juſtly require that, upon this account, he ſhould be mention'd with Honour. Cardinal *de Richelieu*, Cardinal *Mazarini*, Monſieur *Fouquet*, and Monſieur *Colbert*, though no Sovereign Princes, yet had Purſes greater than many of them. Cardinal *de Richelieu* was himſelf a Scholar; and all of them were eminently Favourers of Learned Men. I have mention'd my own Country laſt, that I might once more obſerve, that it was a Prince of our own, who founded the *ROYAL SOCIETY*, (*i*) *whoſe Studies, Writings and Productions, though they have not out-ſhined or eclipſed the* Lycæum *of* Plato, *the* Academy *of* Ariſtotle, *the* Stoa *of* Zeno, *or the* Garden *of* Epicurus; becauſe they were neither written at the ſame Time, nor, for the moſt part, upon the ſame Subjects; yet will always help to keep alive the Memory of that Prince who incorporated them into a Body, that ſo they might the eaſier do that by their Joint-Labours, which ſingly would have been, in a manner, impoſſible to be effected.

(*i*) P. 57.

The laſt of Sir *William Temple*'s Reaſons of the great Decay of Modern Learning, (*k*) is *Pedantry*. The urging of which, is an evident Argument, that his Diſcourſe is levelled againſt Learning, not

(*k*) P. 71.

not as it ſtands now, but as it was $\overline{L}$ or $\overline{LX}$ Years ago. For the New Philoſophy has introduced ſo great a Correſpondence between Men of Learning and Men of Buſineſs, which has alſo been encreaſed by other Accidents amongſt the Maſters of other learned Profeſſions, that that *Pedantry* which formerly was almoſt univerſal, is now in a great meaſure diſ-uſed; eſpecially amongſt the Young Men, who are taught, in the Univerſities, to laugh at that frequent Citation of Scraps of *Latin*, in common Diſcourſe, or upon Arguments that do not require it; and that nauſeous Oſtentation of Reading and Scholarſhip in public Companies, which formerly was ſo much in faſhion. Affecting to write politely in Modern Languages, eſpecially the *French* and ours, has alſo not a little helpt to leſſen it; becauſe it has enabled abundance of Men who want Academical Education, to talk plauſibly, and ſome exactly, upon abundance of learned Subjects. This alſo has made Writers habitually careful to avoid thoſe Impertinences which they know would be taken notice of, and ridiculed; and it is probable, that a careful peruſal of the fine new *French* Books, which of late Years have been greedily ſought after by the politer ſort of Gentlemen and Scholars,

s, may, in this Particular, have done reat deal of good. By this means, and the help also of some other concurrent uses, those who were not learned themves, being able to maintain Disputes h those that were, forced them to talk re warily, and brought them by little little to be out of countenance at t vain thrusting of their Learning into ry thing, which before had been but visible.

CONCLUSION.

THis ſeems to me to be the preſent State of Learning, as it may be compared with what it was in former Ages. Whether Knowledge will improve in the next Age, proportionably as it has done in this, is a Queſtion not eaſily decided. It depends upon a great many Circumſtances; which, ſingly, will be ineffectual, and, which no Man can now be aſſured, will ever meet. There ſeems Reaſon, indeed, to fear that it may decay, both becauſe Ancient Learning is too much ſtudied in Modern Books, and taken upon truſt by Modern Writers, who are not enough acquainted with Antiquity, to correct their own Miſtakes; and becauſe Natural and Mathematical Knowledge, wherein chiefly the Moderns are to be ſtudied as Originals, begin to be neglected by the generality of thoſe who would ſet up for Scholars. For the Humour of the Age, as to thoſe things, is viſibly altered from what it was $\overline{XX}$ or $\overline{XXX}$ Years ago: So that though the

ROYAL

ROYAL SOCIETY has weathered the rude Attacks of ſuch ſort of Adverſaries as *Stubbe*, who endeavoured to have it thought, That Studying of Natural Philoſophy and Mathematics, was a ready Method to introduce Scepticiſm at leaſt, if not Atheiſm, into the World: Yet the ſly Inſinuations of the *Men of Wit*, That no great Things have ever, or are ever like to be perform'd by the *Men of Greſham*, and, That every Man whom they call a *Virtuoſo*, muſt needs be a *Sir Nicolas Gimcrack*: together with the *public ridiculing* of all thoſe who ſpend their Time and Fortunes in ſeeking after what ſome call uſeleſs Natural Rarities; who diſſect all Animals, little as well as great; who think no part of God's Workmanſhip below their ſtricteſt Examination, and niceſt Search: have ſo far taken off the Edge of thoſe who have opulent Fortunes, and a Love to Learning, that Phyſiological Studies begin to be contracted amongſt Phyſicians and Mechanics. For nothing wounds ſo much as a Jeſt; and when Men do once become ridiculous, their Labours will be ſlighted, and they will find few Imitators. How far this may deaden the Induſtry of the Philoſophers of the next Age, is not eaſie to tell; for almoſt all the Parts of Mathematical and Natural

Knowledge require a good deal of Time and Pains, of Induſtry and Attention, before a Man can thoroughly reliſh them: And thoſe who do not, rarely know their Worth, and conſequently do very ſeldom paſs a right Judgment upon them. However, be the Studies of the Men of the next Age what they will, the Writings of the Learned Men of the preſent Time will be preſerved; and as they have raiſed a nobler Monument to the Memory of *Archimedes* and *Diophantus*, of *Hippocrates* and *Ariſtotle*, of *Herophilus* and *Galen*, by Improving their Inventions, than had been raiſed for a Thouſand Years before; ſo ſome future Age, though, perhaps, not the next, and in a Country, now poſſibly little thought of, may do that which our great Men would be glad to ſee done; that is to ſay, may raiſe real Knowledge, upon the Foundations laid in this our Age, to the utmoſt poſſible Perfection to which it can be brought by mortal Men in this imperfect ſtate, and thereby effectually immortalize the Memories of thoſe who laid thoſe Foundations, and collected thoſe Materials which were ſo ſerviceable to them in compleating the noble Work.

But this is what every Man would gladly hope might be reſerved for his own Poſterity,

Poſterity, and his own Country. How it may be reſerved is obvious: It muſt be by joyning Ancient and Modern Learning together, and by ſtudying each as Originals, in thoſe things wherein they ſeverally do moſt excell; by that means few Miſtakes will be committed, the World will ſoon ſee what remains unfiniſh'd, and Men will furniſh themſelves with fitting Methods to compleat it: And by doing Juſtice to every Side, they will have Reaſon to expect, that thoſe that come after them will do the ſame Juſtice to them, whenever they ſhall think fit to ſubmit their Productions to public Cenſure.

FINIS.

CORRIGENDA.

PAge 30. line 21. r. *into very*: p. 57. l. 4. marg. r. *p.* 44: p. 59. l. 30. r. *peculiar*: p. 88. l. 17. r. *to us*: p. 122. l. 30. r. *old Mythology*: p. 129. l. 7. after *Oſtanes* add *or Otanes*: p. 130. for *Alchymiſts* and *Alchymy* r. *Alchemiſts* and *Alchemy*, paſſim: p. 171. l. 17. r. *theſe*: p. 195. l. 19. r. *ſcarce*: p. 201. l. 8. marg. r. *cedat*: p. 230. l. 33. marg. r. *efficitur*: p. 232. l. 27. r. *Conſtantius*; and l. 29. r. 1591: p. 359. l. 28. r. *are at*: p. 377. l. 2. r. *Apollinaris*: p. 390. l. 28. r. *recovered many of them*,: p. 395. l. 3. r. *Reſt*: p. 399. l. 19. r. *Homiletical*.

A DISSERTATION UPON THE EPISTLES OF PHALARIS, THEMISTOCLES, SOCRATES, EURIPIDES, and Others; And the FABLES of ÆSOP.

BY

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Sir William Temple's Eſſay upon Ancient and Modern Learning, *pag.* 58.

IT may perhaps be further affirmed, in favour of the Ancients; That the oldeſt Books we have, are ſtill in their kind the beſt. The two moſt Ancient that I know of in Proſe, among thoſe we call Profane Authors, are Æſop's *Fables, and* Phalaris's *Epiſtles, both living near the ſame time, which was that of* Cyrus *and* Pythagoras. *As the firſt has been agreed by all Ages ſince for the greateſt Maſter in his kind; and all others of that ſort have been but Imitations of his Original: ſo I think the Epiſtles of* Phalaris *to have more Race, more Spirit, more Force of Wit and Genius, than any others I have ever ſeen either Ancient or Modern. I know, ſeveral Learned Men (or that uſually paſs for ſuch, under the Name of Critics) have not eſteemed them Genuine; and* Politian, *with ſome others, have attributed them to* Lucian: *but I think he muſt have little Skill in Painting, that cannot find out this to be an Original. Such Diverſity of Paſſions, upon ſuch Variety of Actions and Paſſages of Life and Government; ſuch Freedom of Thought, ſuch Boldneſs*

neſs of Expreſſion; ſuch Bounty to his Friends, ſuch Scorn of his Enemies; ſuch Honour of Learned Men, ſuch Eſteem of Good; ſuch Knowledge of Life, ſuch Contempt of Death; with ſuch Fierceneſs of Nature, and Cruelty of Revenge, could never be repreſented but by him that poſſeſſed them. And I eſteem Lucian *to have been no more capable of Writing, than of Acting what* Phalaris *did. In all One writ, you find the Scholar or the Sophiſt; and all, the Other, the Tyrant and the Commander.*

A DIS-

A DISSERTATION UPON The EPISTLES of PHALARIS, and others; and the FABLES of ÆSOP.

To Mr. Wotton.

SIR,

I Remember, that discoursing with you upon this Passage of Sir *W. T.* (which I have here set down,) I happen'd to say, That with all Deference to so great an Authority, and under a just Awe of so sharp a Censure, I believed it might be even demonstrated, that the *Epistles* of *Phalaris* are Spurious,

and that we have nothing now extant of *Æsop*'s own Composing. This casual Declaration of my Opinion, by the power of that long Friendship that has been between us, you improved into a Promise, That I would send you my Reasons in Writing, to be added to the New Edition of your Book: believing it, as I suppose, a considerable Point in the Controversie you are engaged in. For if it once be made out, that those Writings your Adversary so extolls, are Suppositious, and of no very long Standing; you have then His and his Parties own Confession, That some of the Later Pens have outdone the Old ones in their kinds: And to others, that have but a mean Esteem of the Wit and Stile of those Books, it will be a double Prejudice against him, in your favour, That he could neither discover the true Time, nor the true Value of his Authors.

These, I imagine, were your Thoughts; when you engaged me to this, that I am now doing. But I must take the freedom to profess, that I write without any view or regard to your Controversie; which I do not make my own, nor presume to interpose in it. 'Tis a Subject so nice and delicate, and of such a mixed and diffused nature, that I am content to make the best

beſt Uſe I can of both Ancients and Moderns, without venturing with you, upon the hazard of a wrong Compariſon, or the envy of a true one.

That *ſome of the Oldeſt Books are the beſt in their kinds*, the ſame Perſon having the double Glory of Invention and Perfection; is a thing obſerved even by ſome of the Ancients (*a*). But then the Authors they gave this Honour to, are *Homer* and *Archilochus*, one the Father of Heroic Poem, and the other of Epode and Trochaic. But the choice of *Phalaris* and *Æſop*, as they are now extant, for the two great inimitable Originals, is a piece of Criticiſm of a peculiar Complexion, and muſt proceed from a Singularity of Palate and Judgment.

(*a*) *Dion. Chryſoſt.* Orat. 33. p. 397.

To paſs a Cenſure upon all kinds of Writings, to ſhew their ſeveral Excellencies and Defects, and eſpecially to aſſign each of them to their proper Authors, was the chief Province and the greateſt Commendation of the Ancient Critics. And it appears from thoſe Remains of Antiquity that are left us, that they never wanted Employment. For to forge and counterfeit Books, and father them upon Great Names, has been a Practice almoſt as old as Letters. But it was then moſt of all in faſhion, when

(*b*) *Galen. in Hippoc. de Natura Hominis,* Comm. 2. p. 17. Ed. *Basil.*

the (*b*) Kings of *Pergamus* and *Alexandria*, rivalling one another in the Magnificence and Copiousness of their Libraries, gave great rates for any Treatises that carried the names of celebrated Authors. Which was an Invitation to the Scribes and Copyers of those Times, to enhance the Price of their Wares by ascribing them to Men of Fame and Reputation; and to suppress the true Names, that would have yielded less Money. And now and then even an Author, that wrote for Bread, and made a Traffic of his Labours, would purposely conceal himself, and personate some old Writer of eminent Note; giving the Title and Credit of his Works to the Dead, that himself might the better live by them. But what was then done chiefly for Lucre, was afterwards done out of Glory and Affectation, as an Exercise of Stile, and an Ostentation of Wit. In this the Tribe of the Sophists are principally concerned; in whose Schools it was the ordinary task to compose Ἠθοποιίας, to make Speeches and write Letters in the Name and Character of some Heroe, or great Commander or Philosopher; Τίνας ἂν εἴποι λόγους, *What would* Achilles, Medea, *or* Alexander *say in such or such Circumstances?* Thus *Ovid*, we see, who was bred up in that way, writ Love Letters

in

in the Names of *Penelope* and the reſt. 'Tis true, they came abroad under his own Name; becauſe they were written in *Latin* and in Verſe, and ſo had no colour or pretence to be the Originals of the *Græcian* Ladies. But ſome of the *Greek* Sophiſts had the Succeſs and Satisfaction to ſee their Eſſays in that kind paſs with ſome Readers for the genuine Works of thoſe they endeavoured to expreſs. This, no doubt, was great Content and Joy to them; being as full a Teſtimony of their Skill in Imitation; as the Birds gave to the Painter, when they peck'd at his Grapes. One of them (*c*) indeed, has dealt ingenuouſly, and confeſs'd that he feign'd the Anſwers to *Brutus*, only as a Trial of Skill: but moſt of them took the other way, and concealing their own Names, put off their Copies for Originals; preferring that ſilent Pride and fraudulent Pleaſure, though it was to die with them, before an honeſt Commendation from Poſterity for being good Imitators. And to ſpeak freely, the greateſt part of Mankind are ſo eaſily impoſed on in this way, that there is too great Invitation to put the trick upon them. What clumſie Cheats, thoſe *Sibylline* Oracles now extant, and *Ariſteas*'s Story of the *Septuagint*, paſſed without controul even among very learned Men.

(*c*) Mabillonius Præf. Epiſt. Bruti.

And

And even ſome Modern Attempts of this kind have met with Succeſs not altogether diſcouraging. For though *Annius* of *Viterbo*, after a Reputation of ſome Years, and *Inghiramius* immediately, were ſhamed out of all Credit: yet *Sigonius*'s Eſſay *de Conſolatione*, as coming from a skilful Hand, may perhaps paſs for *Cicero*'s with ſome, as long as *Cicero* himſelf ſhall laſt. Which I cannot preſage of that bungling Supplement to *Petronius* (I mean not that from *Traw*, but the pretended one from *Buda*) that Scandal to all Forgeries: though, I hear, 'tis at preſent admired as a genuine Piece by ſome that think themſelves no ordinary Judges.

OF

PHALARIS's EPISTLES.

THat Sophist, whoever he was, that wrote a small Book of Letters in the Name and Character of *Phalaris*, (give me leave to say this now, which I shall prove by and by) had not so bad a hand at Humouring and Personating, but that several believed, it was the Tyrant himself that talked so big, and could not discover the Ass under the Skin of that Lion. For we find *Stobæus* (*d*), quoting the 38, and 67, and 72, of those *Epistles*, under the Title of *Phalaris*. And *Suidas*, in the Account he gives of him, says he has wrote *most admirable Letters*, ἐπιστολὰς θαυμασίας πάνυ, meaning those that we are speaking of. And *Johannes Tzetzes*, a Man of much rambling Learning, has many and large Extracts out of them, in his *Chiliads*; ascribing them all to the Tyrant whose Livery they wear. These three, I think, are the only Men among the Ancients, that make any mention of them: but since they give not the least hint of any Doubts concerning their Author; we may conclude, that all the Scholars

(*d*) *Stob.* Tit. vii.

Scholars of thoſe Ages received them as true Originals; ſo that they have the general Warrant and Certificate for this laſt Thouſand Years before the Reſtoration of Learning. As for the Moderns; beſides the Approbation of thoſe ſmaller Critics, that have been concerned in the Editions of them, and cry them up of courſe; ſome very Learned Men have eſpouſed and maintained them, ſuch as *Thomas Fazellus* (e), and *Jacobus Cappellus* (f). Even Mr. *Selden* himſelf (g) draws an Argument in Chronology from them, without diſcovering any Suſpicion or Jealouſie of a Cheat. To whom I may add their lateſt and greateſt Advocate; who has honoured them with that moſt high Character, prefixt to this Treatiſe.

(e) *Hiſtoria Sicula*, p. 118.
(f) *Hiſtoria Sacra & Exotica*, p. 249.
(g) *Marm. Arundel.* p. 106.

Others, indeed, have ſhewn their Diſtruſt of *Phalaris*'s Title to them; but are content to declare their Sentiment without aſſigning their Reaſons. *Phalaris, or ſome body elſe,* [ſays *Cælius Rhod.* lib. iii. c. 7.] *The Epiſtles that go under the Name of Phalaris,* [*Menagius* ad *Laert.* p. 35.] Some name the very Perſon, at whoſe door they lay the Forgery. *Lucian, whom they commonly miſtake for Phalaris,* [ſays *Ang. Politianus*, Epiſt. 1.] *The Epiſtles of Phalaris, if they are truly his, and not rather Lucians,* [*Lilius Greg. Gyraldus, Poet. Hiſt.*

Hist. p.88.] who, in another place, [*p.*332.] informs us, that *Politian's* Opinion had generally obtained among the Learned of that Age: *The Epistles*, says he, *of Phalaris, which most People attribute to Lucian.* How judiciously they ascribe them to *Lucian*, we shall see better anon; after I have examin'd the Case of *Phalaris*, who has the Plea and Right of Possession. And I shall not go to dispossess him, as those have done before me, by an Arbitrary Sentence in his own Tyrannical Way; but proceed with him upon lawful Evidence, and a fair, impartial Trial. And I am very much mistaken in the Nature and Force of my Proofs, if ever any Man hereafter, that reads them, persist in his old Opinion of making *Phalaris* an Author.

The Censures that are made from Stile and Language alone, are commonly nice and uncertain, and depend upon slender Notices. Some very sagacious and learned Men have been deceived in those Conjectures, even to ridicule. The great *Scaliger* published a few Iambics, as a choice Fragment of an old Tragedian, given him by *Muretus*; who soon after confess'd the Jest, that they were made by himself. *Boxhornius* writ a Commentary upon a small Poem *De Lite*, supposed by him to be some ancient

ancient Author's; but it was ſoon diſcover'd to be *Michael Hoſpitalius*'s, a late Chancellor of *France*. So that if I had no other Argument, but the Stile, to detect the Spuriouſneſs of *Phalaris*'s *Epiſtles*; I my ſelf, indeed, ſhould be ſatisfied with that alone, but I durſt not hope to convince every body elſe. I ſhall begin therefore with another ſort of Proofs, that will affect the moſt ſlow Judgments, and aſſure the moſt timid or incredulous.

The Time of *Phalaris*'s Tyranny cannot be preciſely determined, ſo various and defective are the Accounts of thoſe that write of him. *Euſebius* ſets the Beginning of it Olymp. XXXI, 2. *Phalaris apud Agrigentinos tyrannidem exercet*; and the End of it Olymp. XXXVII, 2. *Phalaridis tyrannis deſtructa*. By which Reckoning he governed XXVIII Years. But St. *Hierom*, out of ſome unknown Chronologer (for that Note is not extant in the *Greek* of *Euſebius*) gives a different Time of his Reign, above LXXX Years later than the other; Olymp. LIII, 3. or as other Copies read it, LII, 2. *Phalaris tyrannidem exercuit annos* XVI. Which is agreeable to *Suidas*, who places him, κατὰ τὴν νβ. ὀλυμπιάδα, about the LII Olympiad. If the former Account be admitted, the Cheat is manifeſt at firſt ſight:

ſight: for thoſe Letters of *Phalaris* to *Steſichorus* and *Pythagoras* muſt of neceſſity be falſe. Becauſe *Steſichorus* was but VI Years old at that ſuppoſed time of *Phalaris*'s Death; and *Pythagoras* was not taken notice of in *Greece* till LXXX Years after it. But for the ſake of *Ariſtotle* and *Jamblichus*, who make theſe Three to be Contemporaries, and that I may prevent all poſſible Cavils and Exceptions; I am willing to allow the latter Account, the more favourable to the pretended Letters; his Government commencing Olymp. LIII, 3. and expiring after XVI Years, Olymp. LVII, 3.

I. In the laſt Epiſtle, to thoſe of *Enna*, a City of *Sicily*; *Phalaris* ſays, the *Hyblenſes* and *Phintienſes* had promiſed to lend him Money at Intereſt; Οἱ δ' ὑπέσχηντο δανείσειν, ὡς Ὑβλαῖοι καὶ Φιντιεῖς. The Sophiſt was careful to mention ſuch Cities as he knew were in *Sicily*. For ſo *Ptolemee* places Φιντία there; and *Antoninus*, *Phintis*; and *Pliny*, *Phintienſes*. But it is ill luck for this Forger of Letters, that a Fragment of (*h*) *Diodorus*, a *Sicilian*, and well acquainted with the Hiſtory of his Countrey, was preſerved to be a Witneſs againſt him. That excellent Writer informs us, that *Phintias*, Tyrant of *Agrigentum*, (the very Place where *Phalaris* was before

(*h*) *Diod.* p. 867.

fore him) first built *Phintia*, calling it by his own Name; Κτίζει ὁ Φιντίας πόλιν, ὀνομάσας αὐτὴν Φιντιάδα· and that this was done, while the *Romans* were at War with King *Pyrrhus*, that is, Olymp. CXXV; which is above CCLXX Years after *Phalaris*'s Death, taking even the later Account of St. *Hierom*. A pretty Slip this of our Sophist, who, like the rest of his Profession, was more vers'd in the Books of Orators than Historians, to introduce his Tyrant borrowing Money of a City, almost CCC Years before it was named or built.

II. In the XCII Epistle, he threatens *Stesichorus* the Poet, for raising Money and Soldiers against him at *Aluntium* and *Alæsa*, ἢ εἰς Ἀλόντιον ἢ εἰς Ἀλαισαν: and that perhaps he might be snapt, before he got home again from *Alæsa* to *Himera*, ἐξ Ἀλαίσης εἰς Ἰμέραν. What a pity 'tis again, that the Sophist had not read *Diodorus*: for he would have told him, that this *Alæsa* was not in being in *Phalaris*'s days. (*i*) It was first built by *Archonides*, a *Sicilian*, Olymp. XCIV, 2. or, as others say, by the *Carthaginians*, about Two Years before. So that here are above CXX Years slipt, since the latest period of *Phalaris*. And we must add above a dozen more to the reckoning, upon the Sophist's own

(*i*) *Diod.* p. 246.

own score: For this Letter is supposed to bear date before *Stesichorus* and *Phalaris* were made Friends; which was a dozen Years, as he tells his Tale (*k*), before *Stesichorus* died; and *Phalaris* he makes to survive him. I am aware, that the same Author says, (*l*) that there were other Cities in *Sicily*, called *Alæsa*: But it is evident from the situation, that this *Alæsa* of *Archonides* is meant in the Epistles; for this lies on the same Coast with *Himera* and *Aluntium*, (to which two the Sophist here joins it,) and is at a small distance from them. And indeed there was no other Town of that name in the days of the Sophist, the rest being ruin'd long before.

(*k*) *Epist.* 103.

(*l*) *Diod.* ibid.

III. The LXX Epistle gives an account of several rich Presents to *Polyclitus* the *Messenian* Physician, for doing a great cure upon *Phalaris*. Among the rest, he names ποτηρίων Θηρικλείων ζεύγη δέκα, *ten couple of Thericlean cups*. But there is another thing, besides a pretty Invention, very useful to a Lyar; and that is, a good Memory. For we will suppose our Author to have once known something of these Cups, the time and the reason they were first called so; but that he had unhappily forgot it, when he writ this Epistle. They were large Drinking-Cups, of a peculiar

shape, so called from the first Contriver of them, one *Thericles* a *Corinthian* Potter. *Pliny*, by mistaking his Author *Theophrastus*, makes him a Turner, [lib. xvi. cap. 40.] *Celebratur & Thericles nomine, calices ex terebintho solitus facere torno.* The words of *Theophrastus* are these, [*Hist. Plant.* l. v. cap. 4.] τορνεύεσθαι δ' ἐξ αὐτῆς (τερμίνθου) κύλικας Θηρικλείους, ὥστε μηδ' ἂν ἕνα διαγνῶναι πρὸς τὰς κεραμέας; *That the Turners make* Thericlean *Cups of the Turpentine tree, which cannot be distinguished from those made by the Potters.* Here can nothing be gathered hence, to make *Thericles* himself a Turner; for after he had first invented them, they were called *Thericlean*, from their shape, whatsoever Artificer made them, and whether of Earth, or of Wood, or of Metal. But as I said, by the general consent of Writers, we must call him a Potter. *Hesychius*, Θηρίκλεια, κύλικα εἶδος, ἀπὸ Θηρικλέους κεραμέως. *Lucian* [in *Lexiphanes*, pag. 960.] Καὶ γενῆ πολλὰ, οἷα Θηρικλῆς ὤπλα. *Etymologicon M.* Θηρίκλειον κύλικα, ἣν λέγουσι πρῶτος κεραμεὺς Θηρικλῆς ἐποίησεν, ὡς φησιν Εὔβουλος, ὁ τῆς μέσης Κωμῳδίας ποιητής. The words of *Eubulus*, whom he cites, are extant in *Athenæus*, [lib. xi. p. 471.]

Καθαρώτερον γὰρ ἢ κέραμον ἐργαζόμην,
Ἡ Θηρικλῆς τὰς κύλικας, ἡνίκ' ἦν νέος.

And

And again;

Ω γαῖα κεραμῆτ', ἦ σε Θηρικλῆς ποτε
Ετεύξε, κοίλης λαγόνος εὐρύνας βάθος.

Now the next thing to be enquired, is the Age of this *Thericles*; and we learn that from *Athenæus*; one Witness indeed, but as good as a multitude in a matter of this nature, [*pag.* 470.] Κατασκευάσαι λέγεται τὸ κύλικα ταύτην Θηρικλῆς ὁ Κορίνθιος κεραμεύς, γεγονὼς τοῖς χρόνοις κατὰ τὸν Κωμικὸν Αριστοφάνη; *This Cup*, says he, *was invented by* Thericles *the* Corinthian *Potter, who was contemporary with* Aristophanes *the Comœdian.* And in all probability, he had this indication from some Fable of that Poet's, now lost; where that *Corinthian* was mention'd, as one then alive. But all the Plays that we have left of his, are known to have been written and acted between the LXXXIIX and XCVII Olympiads, which is an interval of XXXVI years. Take now the very first year of that number; and *Thericles*, with the Cups that had their appellation from him, come above CXX years after *Phalaris*'s death.

But I must remove one Objection that may be made against the force of this Argument: for some ancient Grammarians give a quite different account, why such

Cups were called *Thericlean.* Some derive the word, Θηρίκλειος ἀπὸ τῆς θηρίων, *from the skins of Beasts that were figured upon them:* and *Pamphilus* the *Alexandrian* (*m*) would have them called so, ἀπὸ τῶν θηρας κλονεῖν, *because Beasts were scared and frightned, when, in Sacrifices, Wine was poured upon them out of those Cups.* So I interpret the words of *Pamphilus*; ἀπὸ τῶν τ' Διόνυσον τὰς θηρας κλονεῖν, σπένδοντα ταῖς κύλιξι ταύταις κατ' αὐτῶν. For what is more ordinary in old Authors, than the memory of that custom of pouring wine on the heads of the Victims?

(*m*) *Athenæus*, pag. 471.

Ipsa tenens dextra pateram pulcherrima Dido
Candentis vaccæ media inter cornua fudit.

Nor are wild Beasts only called θῆρες, but tame too, such as Bulls and Cows; as the Epigrammatist calls the *Minotaure*, ἄνθρωπον μιξοθηρα. I cannot therefore comprehend why the most learned *Is. Casaubon* will read σπεύδοντα in this passage, and not σπένδοντα. For I own, I see little or no sense in it, according to his Lection. And as for the Authority of the ancient Epitomizer of *Athenæus*, who, he says, reads it σπεύδοντα; one may be certain, 'twas a fault only in that Copy of him that *Casaubon* used. For *Eustathius*, who appears never to have seen the true *Athenæus*, but

but only that Epitome, read it in his Book σπένδοντα, and took it in the same sence that I now interpret it, [*p.* 1209. *Iliad.*] Η διότι θήρας κλονεῖ, σπένδεσι γὰρ κατ' αὐτῶν κύλιξι τοιαύταις. And now for those two derivations of the word Θηρίκλειος; was ever any thing so forced, so frigid, so unworthy of refutation? Does not common Analogy plainly shew, that as from Ηρακλῆς comes Ηράκλειος, from Σοφοκλῆς, Σοφόκλειος, and many such like; so Θηρίκλειος must be from Θηκλῆς? besides so many expres Authorities for it, which I have cited before. To which I may add that of *Julius Pollux*, [l. VI. c. 16.] Θηρίκλειον καὶ Κάνθαρον ἀπὸ τῶν ποιησάντων: and *Plutarch* in *P. Æmilius*, [*pag.* 273.] Οἵτε τὰς Αντιγονίδας, καὶ Σελευκίδας, καὶ Θηκλείους ὑποδεικνύμενοι. And *Clemens Alexand.* [II. Pæd. p. 69.] Εὑρέτων τοίνυν Θηρίκλειοί τινες κύλικες, καὶ Αντιγονίδες, καὶ Κάνθαροι. For one may justly inferr, that both *Plutarch* and *Clemens* believed Θηρίκλειοι to be from Θηκλῆς; because they join them with those other Cups, all which had their names from Men that either invented or used them. And so says a Manuscript note upon that passage of *Clemens*; Θηρίκλειοι ἀπὸ Θηκλέους τοῦ ἐφευρόντος. So that upon the whole, let *Pamphilus* and those other Grammarians

help him as they can, our Sophiſt ſtands fully convicted, upon this Indictment, of forgery and impoſture.

I muſt here beg leave of the late learned Editors of our Mock *Phalaris*, with whom I muſt by and by have ſome further expoſtulation, to diſſent from their new verſion of this paſſage; whereby this argument from *Thericles* would vaniſh into nothing. For inſtead of *ten couple of* Thericlean *Cups*, as the former Interpreters honeſtly tranſlate it, they preſent us, as an emendation, with the like number of GLASSES, *Poculorum Vitreorum*, leaving us not the leaſt footſtep of our *Corinthian* Potter. But methinks theſe Glaſſes come in but odly and ſtingily among thoſe other things named there of great value, φιάλας ἀπέφθε χρυσᾶ, *&c. Veſſels of Gold and Silver, beautiful Slaves, fifty thouſand Drachmæ, and a liberal yearly Penſion for Life.* If *Agathocles* the Tyrant had made this Preſent of *a ſcore of Glaſſes*, it might have paſſed for a mark of favour: becauſe he was a Potter in his youth, and we might ſuppoſe them of his own making. And as I remember, *Diodorus* tells ſuch a ſtory of him. But why *Phalaris* ſhould make ſo cheap and brittle a Complement, I cannot conjecture. 'Tis true, *Suidas* tranſlates it a *Glaſs*, Θηρί-

κλειον

κλειον ποτήριον ὑάλινον : and *Etymolog. Mag.* Θηρίκλειον κύλικα, ποτήριον ὕελινον. But we know the old Lexicons chiefly conſiſt of *Excerpta* out of *Scholiaſts* and *Gloſſaries* upon particular Authors; one of which, in one ſingle place, might expound it *a Glaſs*. But that it muſt univerſally mean ſo, or particularly in this paſſage before us, neither the uſe of the Language, nor good Senſe will allow. For beſides Earth, which was the firſt Material; ſome were made of Wood, as *Theophraſtus* ſays in the place already cited; others of Silver or Gold, as *Plutarch* in *P. Æmilius*; Οἱ δὲ τὰς Θηρικλείους καὶ ὅσα ἄλλα δεῖπνον ΧΡΥΣΩΜΑΤΑ τῷ Περσεῖ ἐπιδεικνύμενοι. And *Athenæus*, [lib. v. p. 199.] Φέροντες οἱ μὲν οἰνοχόας, οἱ δὲ φιάλας, οἱ δὲ Θηρικλείους μεγάλας, πάντα ΧΡΥΣΑ. And I conceive, it were more agreeable to the Generoſity of *Phalaris*, which is the ſubject of ſo many Letters, to ſuppoſe theſe *Thericlean* Cups to be Silver at leaſt, if not a more precious Metal.

IV. In the LXXXV Epiſtle, he boaſts of a great Victory obtained over the *Zancleans*; Ταυρομενείτας καὶ Ζαγκλείους συμμαχήσαντας Λεοντίνοις εἰς τέλος νενίκηκα. But the very preceding Letter, and the XXI, are directed to the *Meſſenians*, Μεσσηνίοις, and the City is there called Μεσσήνη;

and in the First Epist. he speaks of Πολυ-
κλεῖς ὁ Μεσσήνιος. Here we see we have
mention made of *Zancleans* and *Messenians*;
as if *Zancle* and *Messana* were two diffe-
rent Towns. Certainly the true *Phalaris*
could not write thus; and it is a piece of
ignorance inexcusable in our Sophist, not to
know that both those names belong'd to
one and the same City, at different times.
Strabo, [lib. VI. p. 268.] Μεσσήνη, Ζάγκλη πρό-
τερον καλουμένη; Messana, *which was before*
called Zancle. See also *Herodotus*, [lib. VII.]
and *Diodorus*, [lib. IV.] and others. Per-
haps it may be suspected, in behalf of
these Epistles, that this change of Name
was made, during those XVI years of *Pha-*
laris's Tyranny; and then supposing the
LXXXV Letter to be written before the
change, and the other Three after it,
this argument will be evaded. But *Thu-*
cydides will not suffer this suspicion to
(*n*) Lib. VI. p. 414. pass, who relates, (*n*) that at the time of
Xerxes's expedition into *Greece* (which
was Olymp. LXXIII.) *Anaxilaus* King of
Rhegium besieged *Zancle*, and took it, and
called it *Messana*, from the *Peloponnesian*
(*o*) Lib. VI. cap. 23. City of that name, the place of his nati-
vity. The same says (*o*) *Herodotus*: and
(*p*) Lib. XI. p. 37. agreeably to this narrative, (*p*) *Diodorus*
sets down the death of this *Anaxilaus*
Olymp. LXXVI, 1. when he had reigned

XVIII years. Take now the lateſt accounts of *Phalaris*'s death, according to to St. *Hierom*; and above LX years intervene between that, and the new naming of *Zancle*. So that unleſs we dare aſcribe to that Tyrant a Spirit of Vaticination, we cannot acquit the Author of the Letters of ſo manifeſt a cheat.

But I love to deal ingenuouſly, and will not conceal one teſtimony in his favour, which is that of (*q*) *Pauſanias*, who tells the ſtory very differently from *Herodotus* and *Thucydides*, placing this ſame *Anaxilaus* of *Rhegium* about a CLXXX years higher than they do; That he aſſiſted the Refugees of *Meſſana* in *Peloponneſus*, after the ſecond war with the *Spartans*, to take *Zancle* in *Sicily*; which thereupon was called *Meſſana*, Olymp. XXIX: Ταῦτα ᾗ ὅτι τῇ Ολυμπιάδι ἐπράχθη τῇ ἐνάτης ἢ εἰκοστῆς, ἣν Χιόνις Λάκων τὸ δεύτερον ἐνίκα, Μιλτιάδου παρ' Αθηναίοις ἄρχοντος. Now if this be true, we muſt needs put in one word for our Sophiſt; that *Phalaris* might name the *Meſſenians*, without pretending to the gift of Prophecy. (*r*) *Cluverius* indeed would ſpoil all again; for he makes it a fault in our Copies of *Pauſanias*, and for εἰκοστῆς the XXIX Olymp. reads ἑξηκοστῆς the LXIX; which is too great a number, to do our Author any ſervice. But we will not

(*q*) *Meſſen.* p. 134.

(*r*) *Sicil. Antiq.* p. 85.

not take an advantage againſt him, from a miſtake of *Cluverius*; for without queſtion, the true Lection is εἰκοστῇ the XXIX; becauſe the time of the *Meſſenian* War agrees with that computation, and not with the other: and the ancient (*s*) Catalogue of the *Olympionicæ* puts *Chionis*'s Victory at that very year. Ολυμπιὰς εἰκοστὴ ἐνάτη· Χιόνις Λάκων στάδιον. Τεταρακοστή. ὁ αὐτὸς τὸ δεύτερον. So that if *Pauſanias*'s Credit is able to bear him out, our Author, as to this preſent point, may ſtill come off with reputation. But alas! what can *Pauſanias* do for Him, or for himſelf, againſt *Herodotus*, and *Thucydides*, that liv'd ſo near the time they ſpeak of; againſt thoſe other unknown Authors that *Diodorus* tranſcribed; againſt the whole tenor of Hiſtory, confirm'd by ſo many Synchroniſms and Concurrences that even demonſtrate *Anaxilaus* to have lived in the days of *Xerxes*, and his Father; when *Theron*, and not *Phalaris*, was (*t*) Μόναρχος, *Monarch* of *Agrigentum*. Nay, though we ſhould be ſo obliging, ſo partial to our Sophiſt, as for his ſake to credit *Pauſanias* againſt ſo much greater Authority; yet ſtill the botch is incurable; 'tis running in debt with one man, to pay off another. For, how then comes it to paſs, that the *Meſſenians* in another Letter, are

(*s*) *Euſeb. Scalig.* p. 39.

(*t*) *Herodot.* lib. vii. p. 438.

are in this called *Zancleans?* which, by that reckoning of *Pausanias*, had been an obsolete forgotten word, an hundred years before the date of this pretended Epistle.

V. That same XCII Letter, which has furnish'd us already with one detection of the Imposture, will, if strictly examin'd, make a second confession, from these words, ὃς αὐτὰς ἐκλεύψω πίτυϑ᾽ ὅλυν; 'tis a threat of *Phalaris* to the *Himeræans*, *That he would extirpate them like a Pine-tree.* Now here again am I concerned for our Sophist, that he is thus taken tripping. For the Original of this Saying is thus related by (*u*) *Herodotus*: When the *Lampsaceni* in *Asia* had taken captive *Miltiades* the *Athenian*, *Crœsus* King of *Lydia* sent them a Message; That if they did not set him free, he would come and *extirpate them like a Pine*; σφέας πίτυϑ᾽ τρόπον ἀπείλεε ἐκλρίψεν. The men of *Lampsacus* understood not the meaning of that expression, *like a Pine*; till one of the eldest of them hit upon it, and told them, That *of all trees, the Pine, when once it is cut down, never grows again, but utterly perishes.* We see the phrase was then so new and unheard of, that it puzled a whole City. But now if *Crœsus* was upon that occasion the first Author of this Saying,

(*u*) Lib. vi. cap. 37.

Saying, what becomes of this Epiſtle? For this, as I obſerved before, being pretended to be written above a dozen years before *Phalaris*'s death, carries date at leaſt half a dozen before *Crœſus* began his reign.

Nay, there is good ground of ſuſpicion, that *Herodotus* himſelf, who wrote an Hundred Years after *Phalaris* was kill'd, was the firſt broacher of this expreſſion. For 'tis known, thoſe firſt Hiſtorians make every body's Speeches for them. So that the blunder of our Sophiſt is ſo much the more ſhameful. The Third Chapter of the VIII Book of *A. Gellius*, which is now loſt, carried this Title; *Quod Herodotus parum vere dixerit, unam ſolamque pinum arborum omnium cæſam nunquam denuo ex iiſdem radicibus pullulare*; "That *Herodotus* is in the wrong, in ſaying, that of all trees, a Pine only, if lopt, never grows again." I ſuppoſe, *Gellius*, in that Chapter told us, (*w*) out of *Theophraſtus*, of ſome other trees, beſide the Pine, that periſh by lopping; the *Pitch-tree*, the *Firr*, the *Palm*, the *Cedar*, and the *Cypreſs*. But I would have it obſerved, that he attributes the Saying, and the Miſtake about it, not to *Crœſus*, but to *Herodotus*: after whom, it became a Proverb, which denotes an utter deſtruction,

(*w*) *Hiſt. Pl.* lib. iv. c. 19. *Cauſ. Pl.* l. v. c. 24. *Plin.* l. xvii. c. 24.

ſtruction, without any poſſibility of flouriſhing again. See Πεύκης τρόπον in *Zenobius*, *Diogenianus*, and *Suidas*. And 'tis remarkable, that our Letter-monger has *Herodotus*'s very words, πίτυς and ἐκτρίψειν; when all thoſe three other Writers have πεύκη for πίτυς, and κόψειν inſtead of ἐκλρίβειν: which ſhews he had in his eye and memory this very place of *Herodotus*. A ſtrange piece of ſtupidity, or elſe contempt of his Readers, to pretend to aſſume the garb and perſon of *Phalaris*, and yet knowingly to put words in his mouth, not heard of till a whole Century after him.

But here again our late Editors, as if they had been bribed for the Sophiſt, have lopt off and deſtroyed this branch of our Evidence, as far as lay in their power: for they have made bold to execute this Proverb upon it ſelf, and have quite *extirpated the Pine-tree* out of their new Verſion: ὃς αὐτὰς ἐκλρίψω πίτυϕ δίκλω; that is, *qui eos in arundinis morem conteret*, "who will bruiſe them like a Reed," (ſay our critical Interpreters.) It ſeems, the Tranſlation in the former Editions, *Qui eos exſcindam inſtar pinus*, was too eaſie and vulgar. In H. Scripture, indeed, there is mention, by a very elegant Metaphor, of *bruiſed* and *broken Reeds*. But why

why Reeds must be transplanted hither, and the innocent Pine rooted up, I confess to be above my small understanding in Gardening.

VI. In the LXXXV Epistle, we have already taken notice of our Mock-Tyrant's triumph; ὅτι Ταυρομενείτας καὶ Ζαγκλαίους εἰς τέλος νενίκηκε, *That he had utterly routed the* Tauromenites *and the* Zancleans. But there's an old and true Saying, Πολλὰ καινὰ τὰ πολέμου, *Many new and strange things happen in War.* For we have just now seen those same routed *Zancleans* rise up again, after a Thousand Years, to give him a worse defeat. And now the others too are taking their turn to revenge their old losses. For These, though they are called *Tauromenites,* both here, and in the XV, XXXI, and XXXIII Epistles, make protestation against the name; and declare they were called *Naxians*, in the days of the true *Phalaris*. *Taurominium, quæ antea Naxos*, says *Pliny*, [*lib.* III. *c.* VIII.] *Taurominium, quam prisci Naxon vocabant*, says *Solinus*, [*cap.* XI.] Whence it is, that *Herodotus* and *Thucydides*, because they writ before the change of the name, never speak of *Taurominium*, but of *Naxos*, and the *Naxians*. A full account of the time, and the reason, and the manner of the change, is thus given by (x) *Diodorus*.

(x) Lib. xiv p. 282, & 305.

Some

Some *Sicilians* planted themselves Olymp. XCVI, 1. upon a Hill called *Taurus*, near the ruines of *Naxus*, and built a new town there, which they called *Tauromenion*, ἀπὸ τοῦ ταύρου καὶ μένειν, from *their settlement upon* Taurus. About Forty Years after this, Olymp. CV. 3. (*y*) one *Andromachus* a *Tauromenite* gathered all the remnant of the old *Naxians* that were dispersed through *Sicily*, and persuaded them to fix there. This is such a plain and punctual testimony, that neither the power and stratagems of the Tyrant, nor the rhetoric of the Sophist, are able to evade it. Where are those then, that cry up *Phalaris* for the florid Author of the Letters? who was burnt in his own Bull, above CL Years before *Taurominium* was ever thought on.

(*y*) Lib. XV. P. 411.

But I shall not omit one thing in defense of the Epistles; which though it will not do the work, let it go, however, as far as it can. We have allowed, that *Pythagoras* was contemporary with *Phalaris*; and yet in the History of that Philosopher, we are told of his conversation and exploits at *Taurominium*. *Porphyry* says, (*z*) *He deliver'd* Croton *and* Himera, καὶ Ταυρομένιον, *and* Tauromininium, *from Tyrants*: and, (*a*) *That in one and the same day he was at* Metapontium *in* Italy, *and*

(*z*) *Vita Pythag.* p. 169.

(*a*) P. 192, & 193.

Tauro-

Tauromínium *in* Sicily. The same story is told by *(b) Jamblichus*; who supplies us too with another, *(c) That a young man of* Tauromínium *being got drunk, τωρο-μενείτε μελῳδὶς*, Pythagoras *played him sober by a few tunes of grave Spondees.* These several passages seem to concurr with, and confirm the credit of the Letters, that *Tauromínium* had a Name and Being in the time of *Pythagoras* and *Phalaris.* All this would be very plausible, and our Sophist might come off with a whole skin, but for a cross figure in his own Art, *Rhetoric*, called *Prolepsis* or *Anticipation*, *viz.* when Poets or Historians call any place by a name, which was not yet known in the times they write of. As when *Virgil* says of *Æneas*,

(b) *Jambl.* p. 128.
(c) P. 109.

—— *Lavinaque venit Littora :*

and of *Dædalus*,

Chalcidicáq; levis tandem superadstitit arce :

he is excused by *Prolepsis*; though those places were not yet called so in the times of *Dædalus* and *Æneas.* So when *Porphyry* and *Jamblichus* name *Tauromínium* in the story of *Pythagoras*; meaning *Naxos*, which was afterwards called so; the same figure acquits Them. For 'tis no more, than when I say, Julius Cæsar *conquered* France,

France, *and made an expedition into* England: though I know that *Gaul* and *Britain* were the names in that age. But when *Phalaris* mentions *Taurominium* so many generations before it was heard of, he cannot have the benefit of that same *Prolepsis*. For this is not a Poetical, but a Prophetical Anticipation. And he must either have had the Præscience and Divination of the *Sibyls*, or his Epistles are as false and commentitious as our *Sibylline Oracles*.

VII. The xxxv Letter to *Polygnotus* presents us with a Sentence of Moral, ὅτι λόγοι ἔργων σκιὰ παρὰ τοῖς σωφρονεστέροις πεπίστευται, *That wise men take Words for the shadow of Things*; that is, as the Shadow is not alone without the presence of the Body, so Words are accompanied with the Action. 'Tis a very notable Saying, and we are obliged to the Author of it; and if *Phalaris* had not modestly hinted, that others had said it before him, we might have taken it for his own. But then there was either a strange jumping of good Wits, or *Democritus* was a sorry Plagiary; for He laid claim to the first Invention of it, as (*d*) *Diogenes Laertius* says, Τοῦτο ἔφη ἡ τὸ Λόγοι ἔργων σκιή: and (*e*) *Plutarch*, Λόγοι γὰρ ἔργων σκιὴ κατὰ Δημόκριτον. What shall we say to this matter?

(*d*) *Vita Democrit.* (*e*) *De Educat. Puer.*

matter? *Democritus* had the character of a man of Probity and Wit; who had neither inclination, nor need, to filch the Sayings of others. Besides, here are *Plutarch* and *Diogenes*, two witnesses that would scorn to flatter, and to ascribe it to *Democritus*, had they ever read it in others before him. This bears hard indeed upon the Author of the Letters: but how can we help it? He should have minded his hits better, when he was minded to act the Tyrant. For *Democritus*, the first Author of the Sentence, was too young to know even *Pythagoras*, τὰ πρῶ χρόνων μάχεται, says (*f*) *Diogenes*; and yet *Pythagoras* survived *Phalaris*, nay, deposed him, if we will believe his Scholars. We may allow Forty Years space for *Democritus*'s writing; from the LXXXIV Olymp. to the XCIV, in which he died. Now the earliest of this is above an Hundred Years after the last period of *Phalaris*.

(*f*) *Vita Democ.*

I am sensible that (*g*) *Michael Psellus* refers this Saying to *Simonides*; and (*h*) *Isidorus Peleus.* to the *Lacedæmonians*. But these two are of little authority, in a case of this nature, against *Plutarch* and *Diogenes*. Neither would the matter be mended, should we accept of their testimony. For *Simonides* was but Seven Years old, or, as others say, yet unborn, when

(*g*) *De Dæm.* (*h*) Epist. 252, & 259.

when *Phalaris* was kill'd. And were it a *Lacedæmonian* Apophthegm, though the date be undetermined, it might fairly be presumed to be more recent than He.

VIII. In the LI Epistle to *Eteonicus* there is another Moral Sentence; Θνητὸς γὰρ ὄντας ἀθάνατον ὀργὴν ἔχειν, ὡς φάσι τινες, οὐ πρέπει; *Mortal Men ought not to entertain Immortal Anger.* But I am afraid he will have no better success with this, than the former. For (*i*) *Aristotle*, in his *Rhetoric*, among some other sententious Verses, cites this Iambic, as commonly known; (*i*) Lib. ii. cap. 21.

Ἀθάνατον ὀργὴν μὴ φύλαττε θνητὸς ὤν.

This, though the Author of it be not named, was, probably, like most of those Proverbial *Gnomæ*, borrow'd from the Stage; and consequently, must be later than *Phalaris*, let it belong to what Poet you please, Tragic or Comic.

But because it may be suspected, that the Poet himself might take the Thought from common usage, and only give it the turn and measure of a Verse; let us see if we can discover some plainer foot-steps of Imitation, and detect the lurking Sophist under the mask of the

(k) Tit. xxx. Περὶ Ὀργῆς.

Tyrant. (*k*) *Stobæus* gives us these Verses out of *Euripides*'s *Philoctetes*;

Ὥσπερ γὰρ θνητὸν ἡγοῦ τὸ σῶμ' ἡμῶν ἔφυ,
Οὕτω πρέπει μηδὲ τὼ ὀργὼ ἔχειν
Ἀθάνατον, ὅστις σωφρονεῖν διπλᾶ.

Now to him that compares these with the words of the Epistle, 'twill be evident, that the Author had this very passage before his Pen; there is ἔχειν and πρέπει; not only a sameness of sense, but even of words, and those not necessary to the Sentence: which could not fall out by accident. And where has he now a Friend at a pinch, to support his sinking credit? for *Euripides* was not born in *Phalaris*'s time. Nay, to come nearer to our mark; from (*l*) *Aristophanes* the famous Grammarian, (who, after *Aristotle*, *Callimachus*, and others, writ the Διδασκαλίαι, *A Catalogue and Chronology of all the Plays of the Poets*; a Work, were it now extant, most useful to ancient History,) we know that this very Fable, *Philoctetes*, was written Olymp. LXXXVII; which is CXX Years after the Tyrant's Destruction.

(*l*) *Argument. Medeæ Eurip.*

IX. The XII Epistle exhibits *Phalaris* making this complement to his Friends; Ὧν εὐτυχούντων, καὶ αὐτὸς ἑτέρῳ συμπλακῶ δαίμονι, ἡδεῖς ἂν ἦτον εὐτυχεῖν δόξω; *That while they continued in prosperity, his joy*

for

for that, though himself should fall under misfortunes, would still make him happy. But methinks those words, Ἑτέρῳ Δαίμονι, *the Other God, or Genius*, that is, the *Bad* one, have a quaintness in them something Poetical, and I am mistaken if they be not borrowed from some Retainer to the Muses. And now I call it to mind, they are (*m*) *Pindar's*, (*m*) Pyth. 3.

Δαίμων δ' ἑτέρῳ
Ἐς κακὸν τρέψας ἐδαμάσατό νιν·

or *Callimachus's*; for this *Scazon* of his is there cited by the Scholiast,

Οὐ πάντες, ἀλλ' ὅς ἔβαλεν ἄτερθε Δαίμων.

Whether of these our Author made bold with, I cannot determine. *Pindar* I should encline to guess, but that I find him familiar with *Callimachus* upon another occasion; Epist. cxxii. speaking of *Perillus's* invention of the Brazen Bull; Ὑπὲρ ἐμοῦ τὸν ὄλεθρον εὗρε καλὰ τῷ ὑπιβαλευόντων ἀχθηδονέστατον. Where he has taken that expression, τὸν ὄλεθρον εὗρε, from these Verses of (*n*) *Callimachus* that concern the same business; (*n*) Schol. Pind. Pyth. 1.

Πρῶτα ἐπεὶ τὸν ταῦρον ἐκαίνισεν, ὅς τὸν ὄλεθρον
Εὗρε, τὸν ἐν χαλκῷ καὶ πυρὶ γινόμενον.

But be it either of them as you will, I suppose the Ages of both those Poets are

 well

well enough known; so that without any computation of Years, one may pronounce these fine Epistles not to belong to *Phalaris* himself, but to his Secretary the Sophist.

X. The XXIII Epistle is directed to *Pythagoras*; and there he gives to his Doctrine and Institution the name of *Philosophy*; Ἡ Φαλάριδος τυραννὶς τὴν Πυθαγόρου ΦΙΛΟΣΟΦΙΑΣ πλεῖον ὅσον δοκεῖ κεχωρίδαι. And so again in the LVI. he gives him the title of *Philosopher*, Πυθαγόρᾳ τῷ ΦΙΛΟΣΟΦΩ. I could shew now, from a whole crowd of Authors, that *Pythagoras* was the first man that invented that word; but I shall content my self with two, *Diogenes Laertius*, and *Cicero*. The former says, (o) Φιλοσοφίαν πρῶτος ὠνόμασε Πυθαγόρας, καὶ ἑαυτὸν Φιλόσοφον, ἐν Σικυῶνι διαλεγόμενος Λέοντι, τῷ Σικυωνίων τυράννῳ, ἢ Φλιασίων; Pythagoras *first named Philosophy, and called himself* Philosopher, *in conversation with* Leon *the Tyrant of* Sicyon, *or, as some say, of* Phlius. The latter tells us, (p) *That when* Pythagoras *had discoursed before* Leon, *the Tyrant much taken with his wit and eloquence, asked him what Art or Trade he profest. Art, says* Pythagoras, *I profess none, but I am a* PHILOSOPHER. Leon, *in admiration at the newness of the name, enquires what*

(o) P. 3. & 26.

(p) Tuscul. Quæst. l. v.

what those Philosophers were, and wherein they differed from other men; "Quinam "essent Philosophi, & quid inter eos & "reliquos interesset." What a difference is here between the two Tyrants? The one knows not what *Philosopher* means; the other seems to account it as threadbare a word, as the name of *Wise* Men of *Greece*; and that too, before ever he had spoken with *Pythagoras*. We cannot tell, at this distance of time, which Conversation was first, that with *Phalaris*, or that with *Leon*. But allowing *Leon*'s to be the first, yet it could not be long before the other. And 'tis very hard to believe, that the fame of so small a business could so soon reach *Phalaris*'s ear in his Castle, through his Guard of Blue-coats, and the loud bellowings of his Bull. Nay, could we suppose him to have heard of it; yet surely when he had written to *Pythagoras*, he would have usher'd the Word in with some kind of introduction, *That Science which you call* Philosophy; and not speak of it as familiarly, as if it had been the language of his Nurse.

XI. In the LXIII Epistle, he is in great wrath with one *Aristolochus*, a Tragic Poet that no body ever heard of, *for writing Tragedies against him*, κατ' ἐμοῦ γράφειν Τραγῳδίας: and in the XCVII. he threatens

Lysinus, another Poet of the same stamp with the former, *for writing against him both Tragedies and Hexameters*, ἀλλ' ἔπη ἢ τραγῳδίας εἰς ἐμὲ γράφεις. Now to forgive him that silly expression, of writing Tragedies *against Him*, for he could not be the Argument of Tragedy, while he was living; I must take the boldness to tell him, who am out of his reach, that he lays a false crime to their charge. For there was no such Thing nor Word as *Tragedy*, while he tyranniz'd at *Agrigentum*. That we may slight that obscure story about *Epigenes* the *Sicyonian*, *Thespis*, we know, was the first Inventor of it;

Ignotum Tragicæ genus invenisse camænæ
Dicitur, & plaustris vexisse poemata Thespis.

Neither was the Name of Tragedy more ancient than the Thing; as sometimes it happens, when an old Word is borrowed and applied to a new Notion; but both were born together: the Name being taken from Τράγος, the *Goat* that was the Prize to the best Poet and Actor. But *Alcestis*, the first Tragedy of *Thespis*, was acted about (*q*) the LXI Olymp. which is more than twelve Years after *Phalaris*'s death.

(*q*) *Marm. Arund. Suidas* Θέσπις.

XII. Had all other ways fail'd us of detecting this Impostor, yet his very Speech

Speech had betray'd him. For his Language is *Attic*, the beloved Dialect of the Sophiſts, in which all their Μελέται, or *Exerciſes*, were compoſed; in which they affected to excell each other, even to Pedantry and Soleciſm. But he had forgot that the Scene of theſe Epiſtles was not *Athens*, but *Sicily*, where the *Doric* tongue was generally ſpoken and written; as beſides the teſtimonies of others, the very Thing ſpeaks it ſelf in the Remains of *Sicilian* Authors, *Sophron*, *Epicharmus*, *Steſichorus*, *Theocritus*, *Moſchus*, and others. How comes it to paſs then, that our Tyrant tranſacts every thing in *Attic*, not only foreign Affairs of State, but domeſtic Matters with *Sicilian* Friends, but the very Accounts of his Houſhold? Pray, how came that Idiom to be the Court Language at *Agrigentum*? 'Tis very ſtrange, that a Tyrant, and ſuch a Tyrant as He, ſhould ſo doat on the Dialect of a Democraty, which was ſo eminently μισοτύραννος, the *Hater of Tyrants*; which, in his very days, had driven out *Piſiſtratus*, though a generous and eaſie Governour. Eſpecially, ſince in thoſe early times, before Stage-Poetry and Philoſophy and Hiſtory had made it famous over *Greece*, that Dialect was no more valued than any of the reſt.

I would

I would not be here miſtaken; as if I affirmed, that the *Doric* was abſolutely univerſal, or original in *Sicily*. I know, that the old *Sicani*, the Natives of the Iſle, had a peculiar Language of their own; and that the *Greek* Tongue there, like the *Punic*, was only a foreigner, being introduced by thoſe Colonies that planted themſelves there. Moſt of which coming from *Corinth*, *Crete*, *Rhodes*, &c. where all ſpoke the *Doric* Dialect; thence it was that the ſame Idiom ſo commonly obtained almoſt all over *Sicily*; as it appears to have done, to omit other teſtimonies, from the ancient Medals of that Iſland, ΤΑΥΡΟΜΕΝΙΤΑΝ, ΜΕΣΣΑΝΙΩΝ, ΘΕΡΜΙΤΑΝ, ΠΑΝΟΡΜΙΤΑΝ, ΑΙΑΥΒΑΙΙΤΑΝ, ΣΕΛΙΝΩΝΤΙΩΝ; all which words, inſcribed upon their Money, demonſtrate the *Doric* Dialect to have been then the language of thoſe Cities. 'Tis true, there came ſome Colonies to *Sicily*, from *Eubœa*, and *Samos*, and other places; which, in thoſe Parts where they ſettled, might ſpeak, for a while, the *Ionic* or the *Attic*; and afterwards, being mixed with the *Dorians*, might make a new ſort of Dialect, a compound of both: as *(r) Thucydides* obſerves of *Himera*, that the language of that City was at firſt a medly of *Doric* and *Chalcidic*. But that is no more than what happen'd

(r) Lib. vi. p. 414.

happen'd even in *Greece* it self, where there were many (*s*) ὑποδιαιρέσεις τοπικαὶ, *local sub-Divisions* of every Dialect, one Country having always some singularity of Speech, not used by any other. But those little peculiarities do not hinder us from saying in general, that the *Sicilians* spoke *Doric*. For the other Dialects were swallowed up and extinguished by those two powerful Cities of *Dorian* Original, *Syracuse*, and *Agrigentum*, that shared the whole Island between them. *Syracuse* was a *Corinthian* Colony, and spoke (*t*) the Dialect of her Mother City. *Agrigentum* was first built by the *Geloans* of *Sicily*, who had been themselves a Plantation of the *Cretans* and *Rhodians*, both of which were *Dorian* Nations. So that upon the whole, though in some other Towns, and for a time, there might be a few foot-steps of the *Ionic* and *Attic*; yet our Sophist is inexcusable, in making a Tyrant of *Agrigentum*, a City of *Doric* Language and Original, write Epistles in such a Dialect, as if he had gone to School at *Athens*.

(*s*) *Vetus Auctor* Περὶ Διαλέκτων.

(*t*) *Theocrit.* Id. xv.

But there is a (*u*) learned *Greek* Professor (whose Pardon I must ask, that I forgot to name him above, among the Patrons of *Phalaris*,) who, after he has asserted the credit of *Euripides*'s Letters, gra-

(*u*) Vid. *Eurip.* Edit. *Cantab.* p. 523.

gratuitously undertakes to apologize for These too, about this matter of the Dialect. First, says he, (w) *because* Phalaris *was born at* Astypala, *an Island of the* Cyclades, *where was an* Athenian *Colony*, that is one reason for his speaking *Attic*. It were easie to overthrow this first argument at once; by refuting our spurious Epistles, and by shewing, from much better Authority, that *Phalaris* was a *Sicilian* born. But I may speak, perhaps of that by and by; and I will have every Proof I bring stand by it self, without the support of another. Let us allow then, that *Phalaris* came from *Astypalæa*, (for so it is to be called;) not that Isle of the *Cyclades*, according to (x) *Stephanus*; but of the *Sporades*, mention'd by (y) *Strabo* and (z) *Pliny*: for this latter was neareſt to *Crete*, whither *Phalaris's* Wife and Son are supposed to have fled, Epist. LXIX. 'Tis true, our late industrious Editors have discovered a new place of his birth, (a) *Astypalæa*, a City of *Crete*, never mention'd before by any Geographer, situate in the 370th. *deg.* of Longit. bearing South and by North off of *Utopia*. And I am wholly of their opinion, that he was born in that, or in none of them. But because Tradition is rather for the Island, we will beg their good leave to suppose it to

(w) Is enim *Astypala* natus erat, una ex *Cycladibus*, ubi *Atheniensium* erat Colonia.

(x) v. Ἀστυπάλ.

(y) Lib. x. p. 488.

(z) Lib. iv. cap. 12.

(a) Vid. Vitam *Phalar.* & Indicem Edit. *Oxon.*

to be so: and There, as it seems, was formerly a Plantation of *Athenians*; and *Phalaris* being one of their Posterity, must needs, for that reason, have a twang of their Dialect. Now, what a pity 'tis, that *Phalaris* himself, or his Secretary, did not know of this Plantation, when he writ the CXX Letter to the *Athenians*, Ὦ σοφώταλοι γηγενεῖς Ἀθηναῖοι! What a fine complement would he have made upon that subject of their Kindred! If any one know an expres testimony, that there was an *Athenian* Colony at that *Astypalæa*, he can teach me more than I now remember. This I know in general, from (*b*) *Thucydides* and others, that the *Athenians* sent Colonies to most of the Islands; and so That may come in among the rest. But what then? must the Language for ever afterwards be *Attic*, wherever the *Athenians* once had footing? *Thucydides* says in the same passage, That they planted *Ionia*. They had Colonies at *Miletus*, at *Ephesus*, and most of the Maritime Towns of *Asia Minor*. Nay, the *Ionians* and the *Attics* were anciently one People, and the Language the same: and when *Homer* says, (*c*) Ἐνδάλδε Βοιωτοὶ καὶ Ἰάονες, by the latter he is known to mean the *Athenians*. And yet we see, that in process of time, the Colonies had a different

(*b*) Lib. 1. p. 10. Καὶ Ἰώνας μὲν Ἀθηναῖοι καὶ Νησιωτῶν τὰς πολλὰς ὤκισαν.

(*c*) *Strabo*, lib. viii. p. 333. & lib. ix. p. 392.

rent Dialect from that of the Mother Nation. Why then muſt *Aſtypalæa* needs be *Attic?* and that ſo tenaciouſly, that twenty Years living in *Sicily* could not at all alter it in one of her Iſlanders? He was part of that time a (*d*) Publican, or Collector of Taxes and Cuſtoms: Could not that perpetual negoce and converſe with *Dorians* bring his mouth, by degrees, to ſpeak a little broader? Would not He that (*e*) aim'd at Monarchy, and for that deſign ſtudied to be popular, have quitted his old Dialect for that of the place; and not by every word he ſpoke make the invidious diſcovery of his being a Stranger? But what if, after all, even the *Aſtypalæans* themſelves ſhould be found to ſpeak *Doric*? If we make a conjecture from their neighbourhood, and the company they are put in, we can ſcarce queſtion but they were *Dorians*. (*f*) *Strabo* ſays, the Iſland lies between *Cos*, and *Rhodes*, and *Crete*, μεταξὺ τῆ Κῶ μάλιστα καὶ Ῥόδου, καὶ Κρήτης. And that all theſe three uſed the *Doric* Dialect, is too well known, to need any proof.

(*d*) *Polyænus Stratag.*

(*e*) Ibid.

(*f*) Lib. x. p. 488.

But let us hear the Second Apology for the Atticiſm of *Phalaris*. (*g*) He defends him by the like practice of others; that

(*g*) *Sed nec ipſe Diodorus Siculus nec Empedocles Agrigentinus, nec Ocellus Lucanus Dorice ſed Attice fere ſcripſerunt.*

being

being *Dorians* born, repudiated their vernacular Idiom for that of the *Athenians*; as *Diodorus* of *Agyrium*, *Empedocles* of *Agrigentum*, and *Ocellus* of *Lucania*. So that, though *Phalaris* be supposed to be a Native of *Sicily*, yet here is an excuse for him, for quitting the Language. But I conceive, with submission, that this Argument is built partly upon a vulgar Mistake, and partly upon such Instances as are quite different and aliene from the case of our Epistles.

Ocellus Lucanus, the *Pythagorean* Philosopher, writ a small Treatise *Of the Nature of the Universe*; which has been several times printed, and is ἐν κοινῇ διαλέκτῳ, in the common and ordinary *Greek*. But, if I may expect thanks for the discovery, I dare engage to make out; that the Author compos'd it, not in the dress that it now wears, but in *Doric*, his own Country fashion. For I find, it was agreed and covenanted among all the Scholars of that *Italian* Sect, (*h*) φωνῇ χρῆσθαι τῇ πατρῴᾳ, *to use their own Mother-Tongue*: this was the injunction of *Pythagoras*; this was the *tessera* of the whole Party; and those that know any thing of their story, will believe they would have lost their Lives, rather than have broken it. 'Tis most certain, if one had publish'd a Book against that

(*h*) *Jamblichus Vit. Pythagor.* 202.

that Injunction, he would have been baniſh'd the Society. Beſides, when *Jamblichus* tells us of this Compact of theirs, he makes not one Exception to it; which he could not have miſs'd, neither from ignorance nor forgetfulneſs, if ſo common a Tract as this of *Ocellus* had been writ in the *Attic*. Nay, we are aſſured, that other Pieces of this Author were made in the *Doric*; as one *Of Law*, Περὶ Νόμε, cited by (*i*) *Stobæus*: the fragment begins thus; Συνέχει τὰ μὲν σκήνεα ζῶα, ταύτας δ' ἄπιον ψυχά· τ' ἢ κόσμον δερμονία, ταύτας ἢ ἄτιᾳ ὁ θεός. But, which is plain demonſtration, four citations are brought by the (*k*) ſame Writer out of this very Book, Περὶ δ τᾶ πάνᾳ φύσεως, *About the Nature of the Univerſe*; all which are in *Doric*, and not, as they are now extant, in the ordinary Dialect. The firſt of them begins thus, Ἔτι ἢ τὸ ἄναρχον ἢ ἀτελεύταλον ἢ τῶ σχήμαᾳ ἢ τᾶς κινάσιᾳ ἢ τῶ χρόνω ἢ τᾶς ὠσίας τᾶτο πιςᾶ: which is thus extant in the vulgar (*l*) *Ocellus*, p. 16. Ἔτι ἢ ἢ τὸ ἄναρχον ἢ ἀτελεύτητον ἢ τᾶ σχήμαᾳ ἢ δ κινήσεως ἢ δ ἐσίας τᾶτο πιςᾶται. The ſecond, thus beginning, Ἔπει δ' ἐν τῷ παντὶ, extant *p.* 17. The third, Πράτως γὰρ ὕλα τὸ πανδεχές, *&c.* thus extant, *p.* 21. Πρώτως ὕλη τὸ πανδεχές. The fourth, Παντελὴς ἢ φθορὰ τᾶς περὶ τὰν γᾶν

(*i*) *Eclog. Phyſ.* c. 16.

(*k*) Ibid. c. 24.

(*l*) Edit. *Cantab.*

γὰν διακοσμάσιος; extant in ordinary *Greek*, p. 31. Παντελὴς ἢ φθορὰ τ ἀεὶ τῶ γῶ διακοσμήσεως. From which passages these two points are manifestly evinced; That *Ocellus* composed his Writings in *Doric*, and so is falsely brought in for an Excuse to our *Phalaris*: and, which is much more considerable, That this Tract of his now extant, is to be acknowledged for a genuine Work; which hitherto Learned Men have doubted of, from this very business of the Dialect. For we now see by these Fragments, that every word of the true Book is faithfully preserved; the *Doric* only being changed into the ordinary Language, at the fancy of some Copyer since the days of *Stobæus*.

As for *Empedocles* and *Diodorus*, a Poet and an Historian, their case is widely remote from that of our Tyrant. The former, being to write an Epic Poem, shew'd an excellent judgment in laying aside his Country Dialect for that of the *Ionians*; which *Homer* and his followers had used before him, and had given it, as it were, the dominion of all Heroic Poetry. For the *Doric* Idiom had not Grace and Majesty enough for the Subject he was engaged in; being proper indeed for Mimes, Comedies, and Pastorals, where Men of ordinary rank are represented; or for

Epigrams, a Poem of a low vein; or for Lyrics, and the Chorus of Tragedy, upon the account of the *Doric* Musick; but not to be used in Heroic, without great disadvantage. And the Historian likewise, with the rest of that and other *Dorian* Nations, *Philistus*, *Timæus*, *Ephorus*, *Herodotus*, *Dionysius Halic.* &c. had great reason to decline the use of their vernacular Tongue, as improper for History; which, besides the affectation of Eloquence, aims at Easiness and Perspicuity, and is designed for general use. But the *Doric* is course and rustic, and always clouded with an obscurity; ἐχέσης τι τὸ ἀσαφὲς ἡ Δωρὶς διάλεκτος, says (*m*) *Porphyry*; who attributes the decay of the *Pythagorean* Sect to their writing in that Dialect. And we have just now seen an instance of it; since some body thought it worth his labour, to transcribe *Ocellus* into another Idiom. And now, what affinity is there between *Phalaris*'s case, and that of Historians, or Heroic Poets? What mighty motives can be here for assuming a foreign Dialect? The Letters are dated in the middle of *Sicily*, mostly directed to the next Towns, or to some of his own Domestics, about private affairs, or even the expences of his family, and never designed for the public view. If any will still

(*m*) Vita *Pythag.* p. 205.

ſtill excuſe the Tyrant for Atticizing in thoſe circumſtances, 'tis hard to deny them the glory of being the faithfulleſt of his Vaſſals.

XIII. But ſince Tyrants will not be confined by Laws; let us ſuppoſe, if you will, that our *Phalaris* might make uſe of the *Attic*, for no reaſon at all, but his own arbitrary humour and pleaſure: yet we have ſtill another Indictment againſt the credit of the Epiſtles. For even the *Attic* of the true *Phalaris*'s age is not there repreſented; but a more recent Idiom and Stile, that by the whole thread and colour of it betrays it ſelf to be a thouſand years younger than He. Every living Language, like the perſpiring Bodies of living Creatures, is in perpetual motion and alteration; ſome words go off, and become obſolete; others are taken in, and by degrees grow into common uſe; or the ſame word is inverted to a new ſenſe and notion; which in tract of time makes as obſervable a change in the air and features of a Language, as Age makes in the lines and mien of a Face. All are ſenſible of this in their own native Tongues, where continual Uſe makes every man a Critic. For what *Engliſhman* does not think himſelf able, from the very turn and faſhion of the Stile, to di-

stinguish a fresh *English* composition from another a hundred years old? Now there are as real and sensible differences in the several ages of *Greek*; were there as many that could discern them. But very few are so versed and practised in that Language, as ever to arrive at that subtilty of Taste. And yet as few will be content to relish or dislike a thing, not by their own Sense, but by another man's Palate. So that should I affirm, That I know the novity of these Epistles from the whole body and form of the work; none, perhaps, would be convinced by it, but those that without my indication could discover it by themselves. I shall let that alone then, and point only at a few particular marks and moles in the Letters, which every one that pleases may know them by. In the very first Epistle; ὧν ἐμοὶ προφέρεις, *which you accuse me of*, is an innovation in language; for which the Ancients used προφέρεις. In the XVII. προδεδωκότα, *having given before*, never used by the Ancients in that sense, but always for *having betrayed*. In the LI. βουλομένῳ ἐμὲ διώκειν, *desirous to follow me*, where he speaks of his Wife that would accompany him in his exile: but διώκειν anciently signified, *to pursue*; when that which fled, fear'd and shun'd the Pursuer. In the

CXLII,

CXLII, among other Presents to a Bride, he sends θυγατέρας τέτταρας ὁμήλικας; which would anciently have signified *Daughters*: but he here means it of *Virgins* or *Maidens*; as *Fille* and *Figlia* signifie in *French* and *Italian*; which is a most manifest token of a later *Greek*. Even (*n*) *Tzetzes*, when he tells the story out of this Epistle, interprets it *Maids*, θεραπαίνας. In the LXXVII, πολλοὶ παίδων ὄντες ἐρασταὶ, *many that are fond of their children*; for that is his sense of the words; which, of old, would have been taken for *a flagitious love of Boys*; as if he had said, πολλοὶ ὄντες παιδεραστοί. They that will make the search, may find more of this sort; but I suppose these are sufficient to unmask the recent Sophist under the person of the old Tyrant.

(*n*) *Chiliad.* p. 196.

XIV. But should we connive at his using the *Attic* Dialect, and say not a word of those flaws and innovations in his Stile; yet there is one thing still, that, I fear, will more difficultly be forgiven him; that is, a very slippery way in telling of Money. This is a tender point, and will make every body shy and cautious of entertaining him. In the LXXXV Epistle he talks of a *Hundred Talents*, τάλαντα ἑκατόν; of Fifteen more, in the CXVIII; Eight, in the CXXXVII; Seven, in the

the CIV ; Five, in the CXLIII ; and Three, in the XCV. These affairs being transacted in the middle of *Sicily*, and all the persons concerned being natives and inhabitants there ; who would not be ready to conclude, that he meant the *Talent* of the Country ? since he gives not the least hint of his meaning a foreign Summ. If a bargain were made in *England*, to pay so many Pounds or Marks ; and the party should pretend at last, that he meant *Scots* Marks, or *French* Livres : few, I suppose, would care to have Dealings with him. Now this is the very case in so many of these Letters. In the LXX, indeed, he is more punctual with *Polyclitus* his Physician ; for he speaks expressly of *Attic* Money, Μυριάδας Ἀττικὰς πέντε. But this is so far from excusing him, that it is a plain condemnation out of his own mouth. For if it was necessary to tell *Polyclitus*, that he meant the *Attic* Money, and not the *Sicilian* ; why had he not the same caution and ingenuity towards all the rest ? We are to know, That in *Sicily*, as in most other Countries, the Name and Value of their Coins, and the way of reckoning by Summs, was peculiar. The Summ *Talent*, in the *Sicilian* Accompt, contained no more in Specie than Three *Attic* Drachms, or *Roman* Denares ; as plainly

plainly appears from (o) *Aristotle*, in his now lost Treatise of the *Sicilian Government*. And the words of *Festus* are most expres; *Talentorum non unum genus: Atticum est sex millium denarium, Syracusanum trium denarium.* What an immense difference! One *Attic* Talent had the real value of Two Thousand *Sicilian* Talents. Now, in all these Epistles the very Circumstances assure us, that by the word *Talent* simply named, the *Attic* Talent is understood. But should not our wise Sophist have known, that a *Talent*, in that Country where he had laid the Scene of his Letters, was quite another thing? Without question, if the true *Phalaris* had penn'd them, he would have reckoned these Summs by the *Sicilian* Talents, encreasing only the Number: Or should he have made use of the *Attic* Accompt, he would always have given express notice of it; never saying τάλαντον alone, without the addition of Ἀττικόν.

(o) *Pollux*, lib. ix. c. 6.

XV. But to let pass all further arguments from Words and Language; to me the very Matter and Business of the Letters sufficiently discovers them to be an Imposture. What force of Wit and Spirit in the Stile, what lively painting of Humour, some fansie they discern there; I will not examine nor dispute. But me-

thinks little Sense or Judgment is shown in the Ground-work and Subject of them. What an improbable and absurd story is that of the LIV? *Stesichorus* was born at *Himera*; but he chanced to die at *Catana*, a hundred miles distance from home, quite across the Island. (*p*) There he was buried, and a noble Monument made for him. Thus far the Sophist had read in good Authors. Now upon this he introduces the *Himerenses*, so enraged at the others for having *Stesichorus*'s Ashes, that nothing less will serve them, than denouncing of War, and sacking their City. And presently an Embassy is sent to *Phalaris*, to desire his assistance: who, like a generous Allye, promises them what Arms and Men and Money they would: but withal, sprinkles a little dust among the Bees, advising them to milder counsels, and proposing this expedient, That *Catana* should have *Stesichorus*'s Tomb, and *Himera* should build a Temple to him. Now, was ever any Declamator's Theme so extravagantly put? What? to go to War upon so slight an occasion? and to call in too the assistance of the Tyrant? Had they so soon forgot *Stesichorus*'s own counsel? (*q*) who, when upon another occasion they would have asked succour of *Phalaris*, dissuaded them by

(*p*) *Suidas* Πάντα ὁ. κτώ. & Στησιχ.

(*q*) *Aristot. Rhet.* l. ii.

by the Fable of the *Horſe* and his *Rider*. Our Sophiſt had heard, that Seven Cities *contended* about *Homer*; and ſo Two might go to Blows about another Poet. But there's a difference between that Contention, and this Fighting in Earneſt. He is as extravagant too in the Honours he would raiſe to his Poet's Memory; nothing leſs than a Temple and Deification. *Cicero* tells us, that in his days, there was his Statue ſtill extant at *Himera* (then called *Thermæ*,) which, one would think, was Honour enough. But a Sophiſt can build Temples in the Air, as cheaply and eaſily as ſome others do Caſtles.

What an inconſiſtency is there between the LI and LXIX Epiſtles? In the former he declares his immortal hatred to one *Python*, who, after *Phalaris*'s flight from *Aſtypalæa*, would have perſuaded his Wife *Erythia* to a ſecond marriage with himſelf; but ſeeing her reſolved to follow her Husband, he poiſon'd her. Now this could be no long time after his baniſhment; for then ſhe could not have wanted Opportunities of following him. But in the LXIX Epiſt. we have her alive again, long after that *Phalaris* had been Tyrant of *Agrigentum*; for he mentions his growing old there. And we muſt not imagine, but that ſeveral years had paſſed, before he

he could ſeize the Government of ſo populous a City, that had (*r*) 200,000 Souls in it, or, as others (*s*) ſay, 800,000. For he came an indigent Stranger thither, according to the Letters; and by degrees riſing from one employment to another, at laſt had opportunity and power to effect that deſign. Beſides, in the LXIX Letter, ſhe is at *Crete* with her Son; and in the LI, ſhe is poiſon'd (I ſuppoſe) at *Aſtypalæa*: for there her Poiſoner dwelt; and 'tis expreſly ſaid, ſhe deſign'd, but could not follow her Husband. Which ſeems an intimation, that the Sophiſt believed *Aſtypalæa* to be a City in *Crete*. 'Tis certain, our diligent Editors by comparing theſe two paſſages together, made that diſcovery (*t*) in Geography: for it could not be learnt any where elſe; and 'tis an admirable token, both that the Epiſtles are old and genuine, and that the Commentators are not inferior to, nor unworthy of their Author.

(*r*) *Diod. Sicul.* p. 205.
(*s*) *Diog. Laert. in Empedoc.*
(*t*) *Vita Phalar. & Index.*

What a ſcene of putid and ſenſeleſs formality are the LXXIIX, LXXIX, and CXLIV Epiſtles? *Nicocles* a *Syracuſian*, a Man of the higheſt rank and quality, ſends his own Brother an hundred miles with a requeſt to *Phalaris*, That He would ſend to *Steſichorus* another hundred miles, and beg the favour of a Copy of Verſes upon *Clearista* his Wife, who was lately dead.

dead. *Phalaris* accordingly ſends to *Himera* with mighty application and addreſs, and ſoon after writes a ſecond Letter of Thanks for ſo ſingular a Kindneſs. Upon the fame of this, one (*u*) *Pelopidas* entreats him, That he would procure the like favour for a friend of His; but meets with a repulſe. Now, whether there was any Poem upon *Clearista* among the Works of *Steſichorus*, whence our Sophiſt might take the Plot and Ground-work of this ſtory; or whether all is entirely his own invention and manufacture; I will not pretend to gueſs. But let thoſe believe that can, that ſuch ſtuff as this buſied the head of the Tyrant: at leaſt they muſt confeſs then, though the Letters would repreſent him as a great admirer and judge too of Poetry, that he was a mere *Aſinus ad Lyram*. For, in the LXXIX Epiſt. he calls this Poem upon *Clearista* μέλος and μελῳδίαν, which muſt here (as it almoſt ever does) ſignifie a *Lyric Ode*, ſince it is ſpoken of *Steſichorus* a Melic or Lyric Poet. But in the CXLIV he calls it an *Elegy*, ἐλεγεῖον; which is as different from μέλος, as *Theognis* is from *Pindar*, or *Tibullus* from *Horace*. What? the ſame Copy of Verſes both an Ode and an Elegy? Could not ſome years acquaintance with *Steſichorus* teach him the very Names? But to forgive Him, or rather the

(*u*) Ep. lxv.

the Sophist, such an egregious piece of Dulness; why, forsooth, so much adoe, why such a vast way about, to obtain a few Verses? Could not they have writ directly to *Stesichorus*, and at the price of some Present have met with easie success? Do not we know, that all of that String, *Bacchylides*, *Simonides*, *Pindar*, got their livelyhood by the *Muses*? So that to use *Phalaris*'s intercession; besides the delay, and an unnecessary trouble to both, was to defraud the Poet of his Fee.

Nay certainly, they might have employed any hand, rather than *Phalaris*'s. For, begging pardon of the Epistles, I suspect all to be a Cheat, about *Stesichorus*'s friendship with him. For the Poet, out of common gratitude, must needs have celebrated it in some of his Works. But that he *did not*, the Letters themselves are, in this point, a sufficient witness. For, in the LXXIX, *Phalaris* is feigned to entreat him, not once to mention his Name in his Books. This was a sly fetch of our Sophist, to prevent so shrewd an objection from *Stesichorus*'s silence as to any friendship at all with him. But that cunning shall not serve his turn. For what if *Phalaris* had really wished him to decline mentioning his Name? *Stesichorus* knew the World well enough, that those sort

sort of requests are but a modest simulation; and a disobedience would have been easily pardoned. In the LXXIV Letter, he proclaims and glories to his enemy *Orsilochus*, that *Pythagoras* had stay'd five Months with him: why should he then seek to conceal from Posterity the twelve Years familiarity with *Stesichorus*? *Pindar*, exhorting *Hiero* the Tyrant of *Syracuse* to be kind to Poets and Men of letters, tells him how *Cræsus* had immortal praise for his friendship and bounty to them, *but the* (w) *memory of that cruel and inhospitable* Phalaris *was hated and cursed every where.* How could *Pindar* have said this, had he heard of his extraordinary dearness with *Stesichorus*? For their acquaintance, according to the Letters, was as memorable and as glorious, as that of *Cræsus* with *Æsop* and *Solon*. So that *Pindar*, had he known it, for that sole kindness to his fellow Poet, would have forborn so vile a character. *Plato*, in his Second Epistle, recounts to *Dionysius* some celebrated friendships of learned Men with Tyrants and Magistrates; *Simonides*'s with *Hiero* and *Pausanias*, *Thales*'s with *Periander*, *Anaxagoras*'s with *Pericles*, *Solon*'s and others with *Cræsus*. Now, how could he have missed, had he ever heard of it, this of *Stesichorus* with *Phalaris*? being transacted in *Sicily*, and so a most proper

(w) *Pyth. ii.* Τὸν ὃ Ἰαύρῳ χαλκέῳ καυτῇ ἐν ὑηλέᾳ νόον Ἐχθρὸς Φάλαιος κατέχει πάντα φάος.

proper and domeſtic Example. If you ſay, the infamy of *Phalaris* made him decline that odious inſtance: in that very word you pronounce our Epiſtles to be ſpurious. For if They had been known to *Plato*, even *Phalaris* would have appeared as moderate a Tyrant as *Dionyſius* himſelf. (x) *Lucian*, that feigns an Embaſſy from *Phalaris* to *Delphi* for the dedication of the Brazen Bull, makes an Oration in his Praiſe, as *Iſocrates* does of *Buſiris*; where, without doubt, he has gathered all the ſtories he knew for Topics of his commendation: but he has not one word of his friendſhip with *Steſichorus*. Nor, indeed, has any body elſe. And do not you yet begin to ſuſpect the credit of the Letters?

(x) *In Phalar. prior.*

It would be endleſs to proſecute this part, and ſhew all the ſillineſs and impertinency in the Matter of the Epiſtles. For, take them in the whole bulk; if a Great Perſon would give me leave, I ſhould ſay, they are a fardle of Common Places, without any life or ſpirit from Action and Circumſtance. Do but caſt your eye upon *Cicero*'s Letters, or any States-man's, as *Phalaris* was: what lively characters of Men there! what deſcriptions of Place! what notifications of Time! what particularity of Circum-

Circumstances! what multiplicity of Designs and Events! When you return to these again, you feel, by the emptiness and deadness of them, that you converse with some dreaming Pedant with his elbow on his desk; not with an active, ambitious Tyrant, with his Hand on his Sword, commanding a Million of Subjects. All that takes or affects you, is, a stiffness and stateliness and operoseness of Stile: but as that is improper and unbecoming in all Epistles, so especially it is quite aliene from the character of *Phalaris*, a man of business and dispatch.

XVI. It must needs be a great wonder to those that think the Letters genuine; how or where they were conceal'd, in what secret Cave, or unknown Corner of the World, so that no body ever heard of them for a thousand years together. Some trusty Servant of the Tyrant must have buried them under ground; and it was well that he did so. For if the *Agrigentines* had met with them, they had certainly gone to pot. They that burnt alive both Him, and his Relations, and his Friends; would never have spared such monuments of him, to survive Them and their City. And without doubt it was immortal Vellum, and stoln from the (y) *Parchments of Jove*; that could last

(y) Διφθέραι Διός.

last for ten Ages, though untouch'd and unstirr'd; in spight of all damp and moisture, that moulders other mortal skins. For had our Letters been used or transcribed during that thousand years; some body would surely have spoken of them. Especially since so many of the Ancients had occasion to do so: so that their silence is a direct argument that they never had heard of them. I have just now cited some passages of *Pindar*, *Plato*, and *Lucian*; which are a plain indication, that they were unknown to those Three. Nay, the last of these, besides the proof above-named from his silence and prætermission, does as good as declare expressly, that he never saw our Epistles. For, not to mention other differences of less moment, he makes both (z) *Phalaris*, and his Smith *Perilaus*, to be born at *Agrigentum*; but the Letters bring one of them from *Astypalæa*, and the other from *Athens*. *Lucian* then knew nothing of them; or at least knew them, as I do, to be spurious, and below his notice. Much less could he be the Author of them, as *Politian* and his followers believe; for he would neither have been guilty of such flat Contradictions; nor have so forfeited all Learning and Wit, by those gross blunders in Chronology, and that wretched pedantry

(z) *Phalar.* 1. Ἐγὼ δὲ ὅτι μὲν ἀφανῶν ἐγ Ἀκράγαντος ὤν. & ibid. Περίλαος ἦν τις ἠμεδαπός.

pedantry in the Matter. And whosoever those Authors were, that *Lucian* followed, in his Narrative of *Phalaris*; They too are so many Witnesses against the Epistles. One can hardly believe, indeed, that the Sophist should venture to fetch his Tyrant from *Astypalæa*, without the warrant of some old Writer. But yet *Lucian* and his Authors compell us to think so. And we find him as fool-hardy on other occasions. (*a*) *Heraclides* of *Pontus*, that lived within two Centuries of *Phalaris*'s Age, says, the *Agrigentines*, when they recovered their Liberty, burnt Him and his Mother: but our Sophist makes him an Orphan, (*b*) ὀρφανίας περιφανῆ; which if any one shall contend to mean the loss of his Father only, yet still He and *Heraclides* will not set horses together. For if *Phalaris* fled alone from *Astypalæa*, neither Wife nor Child nor any Relation following him, according to the Letters; how came the Old Woman to be roasted at *Agrigentum*? (*c*) *Jamblichus* brings in *Abaris* the Hyperborean in company with *Pythagoras*, to *Phalaris*'s Court: But our Sophist has writ a (*d*) Letter for him, wherein he refuses to come. So little regard had he, to fit his stories to true History: and I have had too much regard to him, in giving him the Honour and Patience of so long an Examination.

(*a*) *De Polit.* ἐνέπρησε ἡ γυνὴ καὶ ἡ μήτηρ.

(*b*) Epist. xlix.

(*c*) *Vita Pythag.* p. 183.

(*d*) Epist. lvii.

I MUST now beg the favour of one word with our late Editors of this Author. They have told the world, in their Preface, That (among other Specimens of their Diligence) they collated the King's MS. as far as the XL Epiſtle; and would have done ſo throughout, but that the Library Keeper, *(e) out of his ſingular Humanity*, denied them the further uſe of it. This was meant as a Laſh for Me, who had the Honour then and ſince to ſerve His Majeſty in that Office. I muſt own, 'twas very very reſolv'd of them, to make the Preface and the Book all of a piece; for they have acted in this Calumny both the injuſtice of the Tyrant, and the forgery of the Sophiſt. For my own part, I ſhould never have honour'd it with a Refutation in Print, but have given it the Neglect that is due to Weak Detraction; had I not been engaged to my Friend, to write this Cenſure upon *Phalaris*; where to omit to take notice of that Slander, would be tacitly to own it. The true ſtory is thus: A Bookſeller came to me, in the name of the Editors, to beg the uſe of the Manuſcript. It was not then in my cuſtody: but as ſoon as I had the power of

(e) Præf. Phalar. Edit. Oxon. *Manuſcripto in Bibliotheca Regia, cujus mihi copiam ulteriorem Bibliothecarius pro ſingulari ſua humanitate negavit.*

of it, I went voluntarily and offer'd it him; bidding him tell the Collator not to lose any time; for I was shortly to go out of Town for two Months. 'Twas deliver'd, us'd, and return'd. Not a word said by the Bearer, nor the least suspicion in me, that they had not finish'd the collation. For, I speak from experiment, they had more Days to compare it in, than they needed to have Hours. 'Tis a very little Book, and the Writing as legible as Print. Well, the Collation, it seems, was sent defective to *Oxon*; and the blame, I suppose, laid upon Me. I return'd again to the Library, some months before the Edition was finish'd: No application was made for further use of the Manuscript. Thence I went for a whole fortnight to *Oxon*, where the Book was then printing; convers'd in the very College where the Editors resided. Not the least whisper there of the Manuscript. After a few weeks, out comes the new Edition, with this Sting in the Mouth of it. 'Twas a surprize, indeed, to read there, that our Manuscript was not perus'd. Could not they have ask'd for it again, then, after my return? 'Twas neither *singular*, nor common *Humanity*, not to enquire into the truth of the thing; before they ventur'd to Print, which is a Sword in the

Hand of a Child. But there is a reaſon for every thing; and the myſtery was ſoon revealed. As for the King's Manuſcript, they had no want nor deſire of it; for, as I ſhall ſhew by and by, they had neither induſtry nor skill to uſe either That or their Own. And for my part; I, it ſeems, had the hard hap, in ſome private converſation, to ſay the *Epiſtles* were a ſpurious Piece, and unworthy of a new Edition. *Hinc illæ lachrimæ.* This was a thing deeply reſented; and to have ſpoken to me about the Manuſcript, had been to loſe a plauſible occaſion of taking revenge.

Pro ſingulari ſua humanitate! I could produce ſeveral Letters from learned Profeſſors abroad, whoſe Books our Editors may in time be fit to read; wherein theſe very ſame words are ſaid of me candidly and ſeriouſly. For I endeavour to oblige even Foreigners by all Courteſie and Humanity; much more would I encourage and aſſiſt any uſeful Deſigns at home. And I heartily wiſh, that I could do any ſervice to that young Gentleman of great Hopes, whoſe Name is ſet to the Edition. I can do him no greater at preſent, than to remove ſome blemiſhes from the Book that is aſcribed to him: which I deſire may be taken aright; to be no diſparagement to himſelf, but a reproof only to his Teachers.

It

It is counted an ill Omen to ſtumble at the Threſhold. In the very Firſt Epiſtle to *Alcibous*, we have theſe words, Ψυχῆς γὰρ νόσον ἰατρὸς ἴσασι θάνατον· ὃν ἀνεπαχθέστατον ἀντὶ πολλῶν καὶ μεγάλων ἀδικημάτων, οὐκ ἀκουσίων ὧν ἐμοὶ προσρέπεις, ἀλλ' ἑκουσίων ὧν αὐτὸς εἰργάσω προσδέχου: that is, *For a diſeaſe of the Soul, the only Phyſician is Death: do you therefore expect a moſt painful one for thoſe many and great injuſtices, not involuntary ones, ſuch as you accuſe Me of, but voluntary ones that your ſelf have committed.* Let us ſee now, how our new Editors have managed this paſſage. Firſt, they interpret ἀνεπαχθέστατον, *nulli gravem:* meaning, I ſuppoſe, that *Alcibous*'s death would be grievous to no body. Which not only produces a flat and farfetcht ſenſe, but is contrary to the rules of good Language. For the *Greek* is in the Superlative degree: let them put it then *nulli graviſſimam*; and it will ſhew them the errror of their Verſion. It will be evident to ſuch as know propriety of Speech, that ἀνεπαχθέστατον, ſince no Dative Caſe follows it, muſt be referred to *Alcibous*, and to no body elſe. I do not expect from our Editors much ſagacity in way of Critic: but though they could not of themſelves find out the true Reading; yet methinks they might have em-

braced it, when they saw it in the Manuscript; which reads it, ὃν ἂν ἐπαχθέσταλον, *a most grievous and cruel death*; meaning that in the Brazen Bull; which he calls, in the CXXII Epist. ὄλεθρον ἀχθηρόταλον, an epithet of the same root and signification. Ἂν in this place, is an expletive particle, παραπληρωματικὸν, as the Grammarians call it; which being a rare and quaint usage, was the cause of corrupting the Text.

The next words in the same passage, ἀδικημάτων, ἐκ ἀκουσίων, our elegant Interpreters render *scelera, non invita.* And this we are to receive for one of their many (*f*) improvements after the former Translators. Those Old ones, good honest Men, put us off with plain country Latin, *Scelera, non præter voluntatem patrata*, and other such Periphrases. For, as it was in their days believed, ἄκων signified *unwilling*, and was always meant of the Agent: ἀκούσιον was *involuntary*, and generally meant of the Action. And this latter, when it signifies the Action, cannot be expressed in Latin by one single word. For *Involuntarius* was not in use: and *Invitus* is the same with ἄκων, and is always spoken of the Person, never of the Thing. So that if any body else had said *scelera invita, unwilling Crimes*; some bold

(*f*) *Præf.* p. 2

bold Readers would be apt to take it for Barbariſm and Nonſenſe: but coming from thoſe great Genius's, with whom Learning, that is a leaving the world, has taken her laſt reſidence, they receive this as a new diſcovery in Language; like (g) another of theirs in Geography. (g) *Sup.* p. 44.

In the very next words to theſe, ἀκουσίων, ὧν ἐμοὶ παρῄνεις; let us ſee if they make any better work there. *Invita, ad quæ me hortaris; Involuntary Crimes, to which you exhort me*, ſays the verſion of our late Editors. Admirably well done again! Pray, how can this *Alcibous*, a *Meſſenian*, be ſaid to *exhort* him to thoſe Cruelties, who ſo much abhorred Him and Them, (as it is in this very Letter,) that he had the Phyſician his Townſman tried for his own Life, for ſaving the Tyrant's? It would puzzle a common Wit to reconcile this; but here's a Note upon this paſſage, that will ſet every thing aright. (h) *Ad quæ me hortaris;*] i. e. *Moribus tuis nequiſſimis provocas.* Commend me to theſe Annotators for a help at a dead lift. *To provoke a Man*, we ſee, *with the baſeſt tricks*, is, in their language, to *exhort* him. So that when They, by a vile aſperſion, inſtead of thanks for a kindneſs receiv'd, have given me juſt *provocation* to anſwer them as they de- (h) *Annot. ad Phalar.* p. 145.

ſerve ; it is only, in their manner, to *exhort* me to do it. It is my *ſingular Humanity*, that I do not follow their Exhortation. But I am apt to believe, that even the Sophiſt himſelf, as illiterate as he was, would diſdain to own ſuch a verſion to be the Echo of his meaning. Had he had in his thoughts ſo ridiculous a ſenſe as they father upon him ; he would have ſaid then, εἰς ἃ, or, ἐφ' ἃ ἐμὲ προτρέπεις. For that is the Syntax of προτρέπω, when it ſignifies to *exhort*. Whereas ἃ ἐμοὶ προτρέπεις (the ἅν in the Text is for ἃ) is, in that ſenſe, as abſurd and incongruous in *Greek*; as *Quæ mihi hortaris*, or, *Quæ mihi provocas* would be in *Latin*. I think I have ſhewn already, that προτρέπειν is here ὀνειδίζειν, *exprobrare*, to accuſe and reproach : *Thoſe involuntary wrongs, that you lay to my charge.* 'Tis true, the word is not uſed in this acceptation by any ancient Authors. I have mention'd it therefore above, as a token of a more recent Writer. But without doubt it was of known uſe in the age of the Sophiſt ; and the innovation was not at all improper. For as the Ancients, both in Poetry and Proſe, uſed προφέρειν to denote this meaning ;

Ταχέες μοι προφέρεις, κάλλιστον ὄνειδος ἀπάντων.

ſo

so by a like metaphor and analogy, we may use περιτρέπειν to express the same notion: just as the Latins say, *vitio* VERTERE. All this, I suppose, was known to the Translator of *Phalaris*, who is commonly, but, I believe, falsly supposed to be *Cujacius*; for he interprets it very well, *Cujusmodi mihi objicis.* But that Edition, and another of *Aldus*, tho' the two principal of all, and both of them in the public Library at *Oxon*, had yet the odd fortune to lie all the while conceal'd (*i*), from our late Editors that lived there.

(*i*) *Præf.* p. 3.

I was, but just now, in the mind to oblige them, by going through their whole Book, and correcting for them all the Faults, that give offence to the best Readers. But now, that I cast my eye backwards, it makes me look as blank, at the prospect of all that's to come; as *Hercules* did, when, after he had made a bargain unseen, he saw the Stables of *Augeas*. For if the very First Epistle, of nine Lines only, has taken me up four Pages in scouring; what a sweet piece of work should I have of it, to cleanse all the rest for them? I must beg their Excuse therefore for the present; and shall only, to keep my Promise, give one Touch of their industry and skill, in making use of the Manuscript.

They

They have confessed to us, they collated the Manuscript to the (*k*) XL Epistle. But, it seems, they could make no use of its various Lections, but in one single place, Epist. XXVI. It is writ to one *Ariphrades*, to caution his Son to leave off plotting against *Phalaris*; ἵνα, ὅταν ἐπ' αὐτῷ γένηλαγ τῷ κακῷ διαλέγων ἐν οἷς ἔχει, μὴ προσποιηθῇ δοκεῖν ἠγνοηκέναι; *lest, when punishment overtakes him for persisting in his present courses, he pretend he had not fair warning.* But what now do our new Editors make of this? διαλέγων ἐν οἷς ἔχει, they translate, *suam expendens conditionem.* This puts me in mind of the old *Greek* Proverb, *That* Leucon *carries one thing, and his Ass quite another.* For here's no affinity at all between the Text and the Version; which would every whit as well agree to any other words in the Book. Even our Editors themselves seem sensible of this; for they give us this Note upon it, (*l*) *That* διαλέγω *cannot admit here of any other meaning: and yet they find it no where else used in this sense.* I dare pass my word for the truth of this latter part: to the former I shall say more anon. *So that,* say they, *the better Reading is in the King's Manuscript,* διὰ τίνων

(*k*) *Præf.* p. 4.

(*l*) Διαλέγω *alium sensum hic vix admittit, in eodem tamen usurpatum nullibi invenio. Melius itaque in MS. Regio* διὰ τίνων ἐν οἷς ἔχει, *ob ea quæ jam agit.* Annotat. pag. 146.

διὰ τίνων ἐν οἷς ἕξι, i. e. *for thoſe things which he now does.* In the King's Manuſcript, which I have now by me, it was written at firſt, διατείνων: but another Hand has raſed out the ε, as appears by the void ſpace, and made it διὰ τίνων. This Corrector, whoever he was, though we know him from hence to be a ſorry Critic; yet he was a degree above our new Editors. For he made his τίνων an Enclitic; but they theirs an Interrogative, as we ſee by their Accent. Which in this place is directly againſt either common Grammar, or common Senſe; chuſe whether they pleaſe. But the genuine lection and meaning is, as I rendred it above; διαλείνων ἐν οἷς ἕξι, *perſiſting and proceeding in his preſent ways.* So in the xxxix Epiſt. μένων ἐν οἷς ἕξι, *continuing in the preſent ſtation.* 'Tis true, our Editors will not find διαλείνων thus rendred in their Dictionaries: but they may pleaſe to enlarge them then from this very place. For, is not διαλείνω exactly the ſame as the Latin *PERTENDO*? And is not *Pertendo*, to *perſiſt and perſevere*?

(*m*) *Verum ſi incipies, neque pertendes naviter.* (*m*) *Ter. Eunuch.* I, 1.

Even the Verſion aſcribed to *Cujacius* has here the true interpretation, *Perſiſtens in propoſito*: which I would adviſe our Editors

tors to consult, when they design to oblige the world by another Edition.

This is all the use they have made of the King's Manuscript: let us see if they have been more diligent in their own. In the xxxiv Epist. the Tyrant tells one *Pollux*, who wonder'd he was grown so recluse, and difficult of access; ἐγὼ δ' ἐνδέοντα ἤδη φεύγω πάντας ἀνθρώπους: *Nay*, says he, *I avoid company less than I ought to do; for I have found no faith either among strangers or friends.* Our new Interpreters have given us here a cast of their Critic; for (*n*) instead of ἐνδέοντα they venture to read ἐκτενέστερον, *ego jam sedulo omnes fugio*: as for the former Lection, they confess they know not what to make on't. Here are your Work-men to mend an Author; as bungling Tinkers do old Kettles: there was but one hole in the Text before they medled with it, but they leave it with two. For the fault is not in ἐνδέοντα, but in ἤδη; which is to be corrected ἢ δεῖ: ἐνδέοντα ἢ δεῖ, *minus quam par est, minus quam oportet.* This is so very easie an Emendation, that a small dose of sagacity might have found it out, by conjecture. But what will the Men of Letters think of our Editors? will they commend their skill or their industry most? when I assure them, that all the Three Manuscripts

(*n*) *Legendum forsan* ἐκτενέστερον, *quam enim interpretationem* ἐνδέοντα *hic admittat, non video.*

nuſcripts which they pretend to have collated, have it plainly and fairly ἢ δεῖ. Which fault will the Editors plead to? to make a public boaſt of collating Three Manuſcripts, and yet neglect every one of them? or, to have obſerved in the Manuſcripts ſo certain a Correction, without either knowledge to make uſe on't themſelves, or ingenuity to communicate it to the world? 'Tis a bad buſineſs on either ſide; and yet it receives a great aggravation from this other which follows. Epiſt. LXVIII. *Phalaris*, to encourage his Son's Bounty; *I do not think*, ſays he, *you ſpend me too much money*, ἀλλ' ἐμαυτὸν ἐνδεέστερον εὑρίσκω ἢ δεῖ χρηστότητι παιδὸς σωτηρίῳ; *but I rather think I allow you too ſparingly, for ſo generous a Son.* Here is ἐνδεέστερον ἢ δεῖ comes again. Now, every one of the Manuſcripts have it here too ἢ δεῖ: Two of which, they pretend, in their Preface, to have throughly collated. And yet they take not the leaſt notice of this plain Emendation, ἐνδεέστερον ἢ δεῖ, *parcius æquo, parcius quam oportet*; but blunder on with the vulgar Reading, and tranſlate it, (*o*) *But I find my ſelf too poor to ſupply your Liberality.* Which, beſides that it does not anſwer the words of the *Greek*, (which would then have been, ἧττον, ἢ χρῄζω.) makes mere non-

(*o*) *Ego me pauperiorem invenio, quàm ut filii benignitati ſufficere poſſim.*

nonſenſe of the Context. For in the very next ſentence, he tells his Son; *You ſhall ſooner want friends to give it to, than I want money to give.* Ingenious Tranſlators! to make him complain of Poverty, and in the ſame breath to declare that he has Riches without end.

Let this ſerve for a ſhort Specimen of their Care and Skill in uſing of Manuſcripts. I have many more inſtances ready at hand; but their *Humanity*, I hope, will pardon me, if I don't produce them now; nor now proceed, as I once thought, to weed all their Book for them. My Time does not lie upon my hands; and this Tract muſt be only a ſhort Appendix to the Book of my Friend: but it's likely hereafter, if, in their way of ſpeaking, they mightily *exhort* me to it; I may be at their ſervice; if not in this, yet in another Language: to carry the fame and glory of our Editors, whither ſuch Editions as theirs ſeldom go, to foreign Univerſities.

OF

THEMISTOCLES's EPISTLES.

SIR,

I Presume I have been as good as my word, in detecting the cheat of *Phalaris*'s *Epistles*: the other part of my Promise was a Censure of *Æsop*'s *Fables*. But before I meddle with those, I am willing, now that my Hand's in, to examine some other Impostures of this sort, out of the same Schools of the Sophists. It will be no unpleasant labour to me, nor, I hope, unprofitable to others, to pull off the disguise from those little Pedants, that have stalked about so long in the apparel of Hero's.

The *Epistles of Themistocles* were printed first at *Rome*, in MDCXXVI, out of a Manuscript in the *Vatican*. The Editor, a *Greek* Bishop, believed them genuine; but there were some that suspected a Forgery, as (*p*) *Leo Allatius* informs us: who himself leaves the matter in doubt; but withal observes in their favour, that no body had ever said a word in print, to prove them to be spurious. (*q*) *Suidas* is

(*p*) *De Script. Socrat.* p. 78.

(*q*) *V.* Θεμιστοκλ.

is an Evidence in their behalf; for, speaking of their reputed Author, he says, *he has writ Letters full of Spirit*, ἔγραψεν ἐπιστολὰς φρονήματος καὶ γεμούσας. He, I think, is the only old Writer that makes any mention of them. Which alone, as before in *Phalaris*'s case, is a shrewd prejudice against their Credit and Reputation.

(r) Lib. 1. p. 90. (r) *Thucydides* and *Charon Lampsacenus* say that *Themistocles*, when he fled into *Asia*, made his address to *Artaxerxes*, who was newly come to the Throne; wherein they are followed by (s) *Cornelius Nepos* and *Plutarch*; against the common tradition of *Ephorus*, *Heraclides*, and most others, that make *Xerxes* the Father to be then alive. Some (t) Writers relate, that he had five Cities given him by the *Persian*; others, but three. Now, if the Letters had been known to any of those Authors, both these Disputes had been soon at an end, or rather never had been raised.

(s) *Vita Themistoc.*

(t) *Plutarch, Diodor. Athenæus*, &c.

(u) Ep. xx. For he himself expressly says, (u) it was *Xerxes* he went to, and that he gave him but three Cities. Now, where could these Epistles lie, unknown and invisible from *Themistocles*'s time to *Suidas*? We must needs say, that the Letters had a worse Exostracism than their Author: since he was banisht but for five Years, but they for a Thousand.

'Tis

II. 'Tis observable, That every one of the Letters bear date after his banishment; and contain a compleat Narrative of all his Story afterwards, without the least gap or interruption. Now 'tis hard to say, whether is the more strange of the two; That not one single Letter of his, before that time, should be preserved; or not one, afterwards, lost, though written from so distant places, *Argos*, *Corcyra*, *Epirus*, *Ephesus*, *Magnesia*, from whence there was no very sure conveyance to *Athens*. What a cross vicissitude of Fortune! while the Author is in Prosperity, all his Letters are unlucky; and not one of them is missing, after he himself miscarried. But the Sophist can easily account for this, though *Themistocles* cannot: for here are no Letters before his Exile; because the latter part of his Life was the whole Tour and Compass that the Sophist designed to write of: and not a Letter afterwards perished; because being forged in a Sophist's Closet, they run no hazard at all of being lost in the carriage.

III. *Themistocles* was an Eloquent Man; but here are some touches in his Letters of such an elevated strain, that if he did not go to School to *Gorgias Leontinus* the Sophist of that time, I can hardly believe he writ them. The Historians tell us moderately,

derately, That after he was driven from home, he was made much on at *Argos*: but He himself is all melting, when he talks on that Subject. (*w*) He was met, he says, on the road by two *Argivans* of his acquaintance; who, when he told them the news of his Banishment, rail'd bitterly at the *Athenians*: but when they heard he was going to *Delphi*, rather than to Their town; in a kind quarrel they tell him, That (*x*) *the* Athenians *had justly punished him*; since he so much wronged the City of *Argos*, to think of any Sanctuary but that. Well, he goes with them to *Argos*; and there the whole City (*y*) *teazes him by mere force* to take the *Government* upon him; taking it as the greatest *injury*, that he offer'd to decline it. These, you'll say, are choice flowers both of Courtesy and of Rhetoric: but there's another clearly beyond them; where he tells us, (*z*) That he is so resolved of going to the *Persian* Court, though it was a desperate risque; *that neither the Advice of his Friends, nor his Father* Neocles's *Ghost, nor his Uncle* Themistocles's, *nor Augury, nor Omen, nor* Apollo's *Oracle it self, should be able to dissuade him.* Here's a bold resolute Blade for you! here's your Stoical κέκραμα! 'Tis almost impossible for a Sophist not to betray him-

(*w*) Ep. i.

(*x*) Ἐπαινεῖν Ἀθηναίους, ὡς δίκαια πόντων ἡμῶν.

(*y*) Ἀναγκάζουσιν, ὡς ἀδικούμενοι, ἢν μὴ ἄρχωμεν.

(*z*) Ep. xiv.

himſelf. Nothing will reliſh and go down with them, that is ordinary and natural. Then they applaud themſelves moſt, when they have ſaid a forced, extravagant thing. If one ſpeaks of any Civility; the Complement muſt be ſtrain'd beyond all Decorum. If he makes a Reſolution; he muſt needs ſwagger and ſwear, and be as willful as a Mad man.

IV. The Subject of many of the Letters is Common place; mere Chat, and telling a Tale, without any Buſineſs; an Errand not worth ſending to the next Town, much leſs to be brought from remote Countries ſome hundreds of Leagues. The XV and XVIII Letters are written to Enemies; his Friends, I ſuppoſe, failing in their Correſpondence: and contain nothing but a little Scolding; which was ſcarce worth the long carriage from *Epheſus* to *Athens*.

V. In the XX Epiſtle we have this Story: When *Themiſtocles* was at *Corcyra*, he deſign'd for *Sicily*, to *Gelo* the *Syracuſian* Tyrant. But juſt as he was going a Shipboard, the news came that *Gelo* was dead, and his Brother *Hiero* ſucceeded him. Now, if we make it appear, that *Hiero* was come to the Crown ſome years before *Themiſtocles*'s Baniſhment, and this Voyage to *Corcyra*; what becomes of the

Credit of our Epistles? 'Tis true, the Chronology of this part of History is not so (*a*) settled and agreed, as to amount to a Demonstration against the Letters; but however, when joined with the Arguments preceeding, at least it will come up to a high Probability. (*b*) *Theophrastus*, in his Treatise *of Monarchy*, relates, That when *Hiero* had sent Race-horses, and a most sumptuous Tent, to the *Olympian* Games; *Themistocles* advised the *Greeks* to plunder the *Tyrant*'s Tent, τὸν τυράννου, and not to let his Horses run. 'Tis evident then, if *Theophrastus* speak properly, that *Hiero* was *Monarch* of *Syracuse*, when *Themistocles* was at *Olympia*; but it's most certain he never came thither after his Exile.

(*a*) Οὐδ' αὐτοῖς χρονικοῖς ἀπρέπεια συνίστα-ται λογισμοῖς. *Plut. Them.* p. 227.

(*b*) Περὶ Βασιλείας apud *Plut. Them.* p. 225.

But, to deal fairly, it must be confessed, that *Ælian*, in telling this story, varies from *Theophrastus*; for he says, (*c*) *Hiero* himself came to the Games. But that he would go thither in Person, after he got the Government, is wholly improbable. So that, if *Ælian* be believed, this business must have been done, before *Hiero* came to the Throne. For even in *Gelo*'s life-time, who left him the Monarchy, he kept Horses for the Race; and won at the *Pythian* Games, (*d*) *Pythiad* the XXVI, which answers to Olymp. LXXIV. 3. But besides

(*c*) *Var. Hist.* IX, 5.

(*d*) *Pind. Schol. Pyth.* 1, & 3.

besides that *Theophrastus* is of much greater authority, the other refutes himself in the very next words. For he says, *Themistocles* hindred *Hiero* upon this pretence; *That he that had not shared in the common Danger, ought not to share in the common Festival:* where it's certain, by the *common Danger*, he means *Xerxes*'s Expedition; when (*e*) *Gelo* either refused or delayed to give the *Greeks* his assistance. This affront then was put upon *Hiero*, after that Expedition. But the very next (*f*) Olympiad after, *Hiero* was in the Monarchy. It cannot be true then, that his first accession to the Throne, was, according to the Letters, while *Themistocles* stay'd at *Corcyra*.

(*e*) *Herod.* vii. c. 163. *Diod.* xi. p. 21.

(*f*) *Diod.* xi. p. 29.

Besides these Inferences and Deductions, we have the express Verdict and Declaration of most of the (*g*) Chronologers, who place the beginning of *Hiero*'s Reign Olymp. LXXV, 3. and *Themistocles*'s Banishment seven years after, Olymp. LXXVII, 2. The *Arundelian* Marble, indeed, differs from all these, in the periods of *Gelo* and *Hiero*: which would quite confound all this argumentation from notes of Time. But either that Chronologer is quite out, or we can safely believe nothing in History. For he makes *Gelo* first invade the Government, two years after *Xerxes*'s Expedition.

(*g*) *Schol. Pind. Pyth.* 1. *Diod.* xi. p. 29, 41. *Euseb. in Chron.*

(*h*)Lib.vii. But (*h*) *Herodotus* spends half a dozen pages in the Account of an Embassy to *Gelo* from *Sparta* and *Athens*, to desire his assistance against the *Persian*. And 'tis agreed among all, (*i*) That *Gelo*'s Victory over the *Carthaginians* in *Sicily* was got the very same day with the Battle at *Salamis*.

(*i*)*Herodot.* ibid. & *Diod.* l. xi.

VI. The whole Volume of *Themistocles*'s Letters consists of XXI only; and Three of these are taken up in the story of *Pausanias*. The Second is writ to *Pausanias* himself, before that *Spartan*'s Conspiracy with the *Persian* was discovered. There he exhorts him to moderation in his Prosperity; lest some very great turn of Fortune should speedily befall him. Can you desire now a surer indication of a Sophist? Without doubt, he that penn'd this Epistle, knew beforehand what happen'd to *Pausanias*: who was soon after recall'd home by the Magistrates, and put to death for Treason. The XIX is to *Pausanias* again; but after his Conspiracy was detected. Here he tells the Particulars of that Plot as exactly, as if he had been one of the *Ephori*, that over-heard it. Nay, he foretells him, that the *Lacedæmonians* would take away his life. Now besides that *Themistocles* would scorn to insult so, and rail to no purpose, as this Letter does; he would surely have had

had more wit, than knowingly to write to the Dead. For at the ſame time he heard thoſe Particulars of *Pauſanias*'s Treaſon, he muſt needs hear of his Execution; ſince thoſe things were not known till after his Death, and the rifling of his Papers. The VI Epiſtle is a long Narrative of the whole buſineſs of *Pauſanias*: for that was a Subject worthy of Eloquence, and therefore was to receive ornament from the Pen of the Sophiſt. But it was ſcarce worthy of *Themiſtocles*, to ſend ſuch a long News-Letter to *Athens*; where, in all likelyhood, the Story was common, before he heard of it himſelf.

But how ſhall we reconcile this Affair of *Pauſanias* according to the Letters, with what *Diodorus* has left us upon the ſame Subject? The Letters, we ſee, make *Themiſtocles* to be baniſht, (*k*) before *Pauſanias* was ſuſpected; and make the one reſide at *Argos*, (*l*) while the other was convicted and put to death. But *Diodorus*, who has brought all his Hiſtory into the method of *Annals*, places the Death of *Pauſanias* (*m*) Olymp. LXXV, 4; and the Exile of *Themiſtocles*, (*n*) ſix years after, Olymp. LXXVII, 2. Now, I would fain know of our Sophiſt, how he came to diſpoſe and ſuit his matters ſo negligently; to bring *Pauſanias* upon the ſtage again, when he had been

(*k*) Ep. ii.

(*l*) Ep. xix. vi.

(*m*) Lib. xi. P. 36.

(*n*) Lib. xi. P. 41.

six years in his Grave? I imagine he will (o) Lib. i. p. 88. referr me to (o) *Thucydides*, who makes an immediate transition from one story to the other; 'That the *Spartans* accused *Themistocles*, who was then banisht from home, 'of conspiring with *Pausanias*.' This, indeed, might draw the Sophist and some others into a mistake. But it may be taken two ways: either that it was done presently, upon the Death of *Pausanias*; or a few years after, when *Themistocles*'s Exile gave the *Spartans*, that hated and fear'd him, an (p) In *Themist.* p. 224. opportunity to ruine him. (p) *Plutarch* follows the first way; for he makes *Themistocles*, after his Banishment, to have private dealings with *Pausanias*: in which opinion he favours the Author of these Letters. But the second will rather appear to be the sense of *Thucydides*: if we consider, that he places the matter of *Pau-* (q) P. 63. *sanias* (q) just after the flight of *Xerxes*; but when *Themistocles* went into *Asia*, he (r) P. 90. makes (r) *Artaxerxes* to be in the Throne: which was a considerable while after. Besides that *Diodorus*, whose design was to referr all Occurrences to Years, and not to follow the thread of Story beyond the annual Period, is of more credit in a point of Chronology; than *Plutarch* or any other, that write Lives by the Lump.

OF

OF

SOCRATES's EPISTLES.

THE *Epistles* of *Socrates*, and his Scholars, *Xenophon*, *Aristippus*, &c. were publish'd out of the *Vatican* Library by the Learned *Leo Allatius*; and printed at *Paris*, MDCXXXVII. He was so fully persuaded himself, and so concerned to have others think, that they are the legitimate Off-spring of those Authors they are laid to; that he has guarded and protected them, in a Dialogue of LVII Pages in *quarto*, against all the Objections that He or his Friends could raise. And no body since, that ever I heard of, has brought the matter into controversie. But I am enclined to believe, that by that time I have done with them, it will be no more a Controversie, but that they are spurious. I shall make use of nothing that *Allatius* has brought, except one Objection only; and that I shall both manage in a new way, and defend it against all his Exceptions.

I. The First Letter is *Socrates*'s to some King, 'tis supposed to *Archelaus* King of *Macedonia*; in which he refuses to go to him,

him, though invited in the most kind and obliging manner. That he really denied his company to *Archelaus* and others, we are assured from very good hands: which was the ground for our Falsary to forge this Epistle. But I believe, none of those that mention it, make so tall a Complement to *Socrates*, as he does here to himself. For he says, (*s*) *The King offer'd him part of his Kingdom*; and, *that he should not come thither to be commanded, but to command both his Subjects and Himself.* Can you desire a better token of a Sophist, than this? 'Tis a fine offer, indeed, to a poor old Man, that had nothing but his Staff and one Coat to his back. But a Sophist abhorrs mediocrity; he must always say the greatest thing; and make a Tide and a Flood, though it be but in a Bason of Water.

(*s*) Τῆς βασιλείας ἔφης μέρος δίδοναι. Καὶ Ἀρξοῦλα καὶ ἄρχεσθαι καὶ σεαυτοῦ.

II. Well; our Philosopher goes on, and give a reasons of his refusal; That his Dæmon forbid him to go: and then he falls into the long story of what happen'd to him in the Battle at *Delium*; which was a tale of twenty years standing at the date of this Letter. But the Sophist had read it in *Plato*; and he would not miss the opportunity of an eloquent Narration. I will not here insist upon the testimony of (*t*) *Athenæus*; That the whole business is

(*t*) Lib. v. p. 215.

is a mere fiction of *Plato's*: let that be left in the middle. But we may ſafely inferr thus much from it; That even *Athenæus* himſelf, whoſe curioſity nothing eſcaped, never met with theſe Epiſtles. Which alone creates a juſt ſuſpicion, that they were forged ſince his days; eſpecially when the univerſal ſilence of all Antiquity gives a general conſent to it.

There's a paſſage, indeed, in (x) *Libanius*, which, in *Allatius*'s judgment, ſeems plainly to declare, that he had ſeen this very Epiſtle. For after he had mention'd *Socrates*'s refuſal to go to *Scopas*, and *Eurylochus*, and *Archelaus*; he adds; Αὐτῶν ᾧ ἐδεόμην τῆς Ἐπιστολῶν, ἐν ἐκείναις τὸν ἄνθρωπον κάλλιστα ἂν ἤδη. Now ſhould we concede, what *Allatius* would have; this is all that can be inferred from thence in their favour; That they are older than *Libanius*; which I am willing to believe: and, That He believed them true; which I matter not at all. For ſo we have ſeen *Stobæus*, *Suidas* and others, cry up *Phalaris* for a genuine Book; and yet I fanſie none of my Readers are now of their opinion. But with *Allatius*'s good leave, I would draw the words of *Libanius* to a quite contrary purpoſe. After he had ſaid, that many Princes had ſollicited *Socrates*, by Letter, to come and live in their Courts; and

(x) *Analogia Socrat.*

and he anſwer'd them all with a denial: *But* (ſays he) *I want the Letters themſelves; in which you might perfectly ſee the Spirit of the Man.* This, to me, is an indication, that the Letters he means were not extant. For if he had them in his hand, according to *Allatius*, how could he *want* them? And 'tis plain, he ſpeaks here of ſeveral Letters, being Replies to ſeveral Meſſages; but in this Collection here's but a ſingle one. *I wiſh* (ſays he) *the Letters were to be had; in thoſe you might read his Character.* If this be the ſenſe of thoſe words, as probably it is; *Libanius* is ſo far from being Patron to our Epiſtles, that he is a poſitive Witneſs againſt them.

III. The VII Letter is writ by *Socrates* to one of thoſe that had fled to *Thebes* from the violence of the XXX Tyrants: in which he gives him an account of the ſtate of *Athens* ſince their departure; *That himſelf was now hated by the Tyrants, becauſe he would have no hand in the condemnation of* Leon *the* Salaminian: and then he tells the ſtory at large. Now, here's a manifeſt diſcovery that the Letters are ſuppoſititious. For the buſineſs of *Leon* was quite over, before thoſe Fugitives left the Town. For *Leon* was murder'd (*u*) before *Theramenes* was: and *Theramenes* was murder'd, before

(*u*) *Xenoph. Hiſt.* lib. ii. p. 467, 470. *Diod.* l. xiv.

fore *Thrasybulus* and his Party fled to *Thebes*. And that *Socrates* means them in this Letter, 'tis evident from hence; That he speaks here of their Conspiracy, to resort privately towards *Athens* and set upon the Tyrants: which afterwards came to pass.

IV. The VIII, IX, XII, and XIII, are Letters of Jest and Railery between *Antisthenes* and *Aristippus* and *Simon* the Shoo-maker. 'Tis an affront to the memory of those Men, to believe they would fool and trifle in that manner; especially send such impertinent stuff as far as from *Sicily* to *Athens*, which could not decently be spoken even in merriment at a Table.

V. In the XIII Epistle, among the acquaintance of *Simon* he names *Phædrus*, the same that gives the Title to the Dialogue of *Plato*: and the XXV is writ by *Phædrus* himself to *Plato*: and both these are dated after *Socrates*'s death. I will appeal now to *Athenæus*, if these two Letters can be genuine. He, among other Errors in Chronology for which he chastises *Plato*, brings this in for one; (*y*) *That he introduces* Phædrus *discoursing with* Socrates; *who must certainly be dead before the days of the Philosopher.* How comes he then to survive him, in these Epistles; and discourse so passionately of his Death?

(*y*) Lib. XI. pag. 505. Ἀδύνατον ἦν τὸν Φαίδρον Σωκράτει συνεῖναι τῷ φιλοσόφῳ.

'Tis

'Tis true; for want of ancient History, we cannot back this Authority with any other Testimony. But I am sure, all those that have a just esteem for *Athenæus*, can have no slight one of this Argument against the credit of the Letters.

VI. The XIV Epistle gives *Xenophon* a long Narrative of *Socrates*'s Tryal and Death; being writ presently after by one of his Scholars that was present at both. Among other particulars, he tells him, (z) *That the Oration or Charge against* Socrates *was drawn up by* Polycrates *the Sophist.* But I doubt this will turn to a Charge against another Sophist, for counterfeiting Letters. For, I think, I can plainly prove, That at the date of this Letter there was no such report ever mention'd, that *Polycrates* had any hand in it; and, that this false Tradition, which afterwards obtained in the World, and gave occasion to our Writer to say it in his Letter, did not begin till some years after *Socrates*'s condemnation.

(z) Ἦν δὲ λόγος Πολυκράτης τῆ λογογράφῳ.

Diogenes Laertius brings *Hermippus*'s testimony, That *Polycrates* made the (a) Charge. Συνέγραψε δὲ τὸν λόγον Πολυκράτης ὁ σοφιστὴς, ὥς φησιν Ἕρμιππος. But, in opposition to this, he presently subjoins; "That *Favorinus*, in the First "Book

(a) *Vita Socrat.*

" Book of his *Commentaries*, ſays, That " *Polycrates*'s Oration againſt *Socrates* " is not *true and real:* becauſe he men- " tions in it the Walls, built by *Conon* " ſix years after *Socrates*'s death." To which *Laertius* ſubſcribes his own aſſent, Καὶ ἔστιν οὕτως ἔχον, *And ſo it is.* I may freely ſay, that this paſſage of *Favorinus* has not been yet rightly underſtood. It is generally interpreted, as if he denied the Oration that is attributed to *Polycrates* to be really his. But this is very far from being his opinion. For then he would be flatly confuted by *Iſocrates*, a Witneſs unanſwerable; who, in a Diſcourſe which he addreſſes to this very *Polycrates*, tells him; (*b*) *I perceive you value your ſelf moſt upon two Orations,* The Apology of Buſiris, *and* Accuſation of Socrates. But *Favorinus*'s meaning was; That *Polycrates* did not make that Oration for a true Charge to be ſpoke at the Tryal of *Socrates*; but writ it ſeveral years after, for no other Trial than that of his own Wit. The words in the *Greek* can admit of no other ſenſe; Μὴ εἶναι ἀληθῆ τὸν λόγον τὸν Πολυκράτους καλὰ Σωκράτους· ἐν αὐτῷ γὲ μνημονεύει τῆς τοῦ Κόνωνος τειχῶν, &c. Obſerve, that he ſays μνημονεύει, *Polycrates mentions*: if he had denied him to be the Author, he would have ſaid in the Paſſive, *There*

(*b*) Ἐπὶ τῇ Βουσίριδος ἀπολογίᾳ, καὶ τῇ Σωκράτους κατηγορίᾳ. *Iſoc. Buſir.*

There is mention'd. Besides he expresly calls it τὸν λόγον τὸν Πολυκράτους, only denies it to be ἀληθῆ. But if he had denied it to be His, he would have said, Μὴ εἶναι Πολυκράτους τὸν λόγον τὸν καλὰ Σωκράτους: as *Laertius* speaks in other places; (*c*) Λακεδαιμονίων Πολιτείαν, ἣν φησιν ἐκ εἶναι Ξενοφῶντος ὁ Μάγνης Δημήτριος. (*d*) Διαλόγους, ὃς Πεισίστρατος ὁ Ἐφέσιος ἔλεγε μὴ εἶναι Αἰσχίνου. This, I think, is sufficiently clear. Now we are to know, it was the custom of the old Sophists to make an ostentation of their Art, upon some difficult Subjects and Paradoxes, such as other people could speak nothing to: as the commendation of a Fever or the Gout. *Polycrates* therefore, to shew his Rhetoric in this way, writ an Apology of *Busiris*, that kill'd and eat his Guests; (*e*) and of *Clytemnestra*, that murder'd her Husband: and to give a proof of his skill, as well in accusing Vertue, as in excusing Vice, he writ an Indictment against *Socrates*; not ἀληθῆ, *the true one*, as *Favorinus* truly says, but only a Scholastic Exercise; such as *Plato*, *Xenophon*, *Libanius* and others writ in his Defense. So that we are no more forced to believe, that His Oration was the true Charge that was spoken at *Socrates*'s Tryal; than, that he really pleaded for *Clytemnestra*, when *Orestes* was going to kill

(*c*) In *Xenoph.*

(*d*) In *Æschine.*

(*e*) *Quintil.* lib. ii. cap. 18.

ill her. Nay, it appears to me, from *Socrates* himself, that it was but a Scholastic Exercise, and after *Socrates*'s death. For he blames *Polycrates*, for reckoning *Alcibiades* among *Socrates*'s Disciples: since, besides that no body else ever counted him his Scholar; had he really been so, he had been a commendation to his Master; and not a disparagement, which was the aim of the Sophist. (f) *So that* (says he) *if the dead could have knowledge of your Writings*, Socrates *would thank you.* Is not this a clear indication, that *Socrates* was *dead*, before the Oration was made? and that this was not the true Charge? For then he would have heard it at his Tryal: and there had been no occasion to say, *if the dead could have knowledge of it.* In the close of all, he advises him to leave off shewing his parts upon such *villainous Themes*, πονηρὰς ὑποθέσεις; lest he do public mischief by putting false colours upon things. Here again we are plainly told, that his Action against *Socrates*, like those for *Busiris* and *Clytemnestra*, was but a Declamation, a Theme and Exercise in the School, and not a real Indictment in the *Areopagus* at *Athens.* To all which let me add, That neither *Plato* nor *Xenophon* nor any body

(f) Εἰ γένοιτο ἐξουσία τοῖς τετελευτηκόσι βουλεύσασθαι περὶ ὧν εἰρημένων, ὁ μὲν χάριν ἂν εἰδείη σοι. *Isoc. Busir.*

contemporary with *Socrates*, ever once mention *Polycrates* for the Author of the Charge: which, had the thing been true, they would certainly have thrown in his teeth, considering the perpetual quarrel between Sophists and Philosophers. And 'tis well known; that the *Athenians*, in a penitential mood, either banisht or put to death all those that had any hand in *Socrates*'s accusation. If *Polycrates* then were so eminently guilty, as to draw up the Impeachment; how could he escape untoucht, when all the rest suffer'd?

But when the *Accusation of Socrates*, though only a Sophistical Exercise, came abroad in the world; it was natural enough, in some process of time, that those that heard of it only, or but perfunctorily read it, should believe it to be the real *Charge*. We have seen already, that *Hermippus* was in that mistake, who lived an hundred years after; and with him *Quintilian*, *Themistius*, and others innumerable. *Favorinus*, it seems, alone had the sagacity, by a notice from Chronology, to find it of a more recent date than *Socrates*'s Tryal. And even that very passage of *Favorinus* has lain hitherto in the dark: so that my Reader may forgive me this prolixity and niceness; since he learns by it a piece of News. As for *Hermippus*, lest

lest the Authority of so celebrated an Author should deterr one from so plain a truth; I will shew another slip of his, and a worse than this, in the story of *Socrates*. When *Gryllus* the Son of *Xenophon* was slain in the same battle that *Epaminondas* was; most of the Wits of that Age writ Elegies and Encomium's on him, in complement and consolation to his Father. Among the rest, * *Hermippus* says, *Socrates* was one. Which is a blunder of no less than xxxvii years, the interval between *Socrates*'s death and the battle of *Mantinea*.

* *Laert. in Xenoph.*

Socrates was put to death Olymp. xcv, 1. when *Laches* was Magistrate. This is universally (*g*) acknowledged; and to go about to prove it, were to add Light to the Sun. And six years after this, Olymp. xcvi, 3. (*h*) in *Eubulides*'s Magistracy, *Conon* repair'd the Walls. Which gave the hint to *Favorinus*, and after him to *Diogenes*, to discover the common mistake about *Polycrates*'s Oration. But *Leo Allatius*, to avoid the force of their Argument, undertakes an impossible thing; to prolong *Socrates*'s life above twenty years beyond *Laches*: so that He might see *Conon*'s Walls, and *Polycrates*'s Declamation

(*g*) See *Diodorus*, *Favorinus*, *Diog. Laertius*, *Aristides*, *Marmor. Arund.* *Euseb.* *Argumentum Isocr.* *Busir.* &c.

(*h*) *Diodor.* xiv. p. 303. *Favorin.* *Diog. Laert.*

mation be the true Charge at his Tryal. Which he would make out by comparing together some Scraps of different Authors, and some Synchronisms of other Men's Lives with *Socrates*'s. As if those things which are only mistakes and unwary slips of the Writers, could have any force or credit against so many express Authorities. By the same way that he proceeds, I will shew the quite contrary; that *Socrates* died twenty years before *Laches*'s Government. For we have it from good Hands, (*i*) That *Euripides*, in a Play of his call'd *Palamedes*, using these words, Ἐκάνετ', ἐκάνετε τὰν πάνσοφον, &c. designed to lash the *Athenians* for *Socrates*'s murder: and the whole Theatre perceiving it, burst into tears. *Socrates* therefore died before *Euripides*. But 'tis well known, that the latter died six years before *Laches* was Archon. Nay, *Socrates* must needs be dead, before *Palamedes* was acted. But that was acted Olymp. XCI, 1. (*k*), which is sixteen years before *Laches*. Have I not proved now exactly the quite contrary to *Allatius*? But still, I hope, I have more judgment, than to credit such an oblique Argument against so many direct Testimonies. If *Allatius* had looked round about him, he would not have committed so great a blunder; while

(*i*) *Diog. Laert. in Socrat. Argum. Isoc. Busir.*

(*k*) *Ælian. Var. Hist.* ii, 1. *Schol. Aristoph. Opvιθ.* p. 401.

while he defends his Epistles at one Post, to expose them to worse Assaults. If *Socrates* died in *Laches*'s Magistracy, one Epistle must be spurious, that mentions *Polycrates*. This Breach *Allatius* would secure; and therefore he will needs make him live several years longer. But then, say I, if we concede this to *Allatius*; not one Epistle only, but the whole bundle of them are spurious. For most of them plainly suppose, that *Socrates* died under *Laches*. Even this very Epistle complains (*l*) that *Xenophon* was abroad when *Socrates* suffer'd; and that the Expedition of *Cyrus* hindred him from being present then at *Athens*: and a second Letter, to name no more, dated after *Socrates*'s death, makes *Xenophon* to have newly escaped the dangers of his long March through Enemies Countries. Now, all the world knows, (*m*) that *Cyrus*'s Expedition and *Xenophon*'s March was in *Laches*'s time, and the year before him. So that upon the whole; there is no escape, no evasion from this Argument; but our Epistles must be convicted of a manifest Cheat.

(*l*) Ep. xiv. xviii.

(*m*) *Marm. Arund. Laert. Diodor.* &c.

VII. In the XVII Letter, one of *Socrates*'s Scholars, supposed to be present at *Athens* when the things he speaks of were acted, says, the *Athenians* (*n*) put to death both *Anytus* and *Melitus*, the Prosecutors of

(*n*) Ἄνυτόν τε καὶ Μέλιτον ἀπέκτειναν.

(o) *Laert. in Socrat. & in Antisth. Themist. Orat.* ii. *Augustin. de Civ. Dei*, viii, 3.

Socrates: which being contrary to known matter of fact, proves the Epistle to be a forgery. *Melitus*, indeed, was kill'd; but *Anytus* was only banisht; and (*o*) several Writers speak of him afterwards at *Heraclea* in *Pontus*.

VIII. The XVIII is a Letter of *Xenophon's*, inviting some Friends to come to see him, at his Plantation near *Olympia*. He says, *Aristippus* and *Phædo* had made him a Visit: and that he recited to them his (*p*) *Memoirs of Socrates*; which both of them (*q*) *approved* of. This alone is sufficient to blast the reputation of our famous Epistles. For, how is it likely, that *Aristippus* would go so far to see *Xenophon*, who (*r*) was always his Enemy? Much less would he have given his approbation to a Book, that was a Satyr against himself. For the Book is yet in being; and in it he introduces *Socrates*, in a long Lecture, reprehending *Aristippus* (*s*) for his Intemperance and Lust. Even *Laertius* takes notice, That he brought in *Aristippus's* name upon that scandalous occasion, out of the enmity he bare him.

(p) Ἀπομνημονεύματα.

(q) Ἐδόκει ἁρμόδιά τινα εἶ.

(r) Ξενοφῶν ὃ ἔχθρα πρὸς αὐτὸν διαμενῶς. *Laert. in Aristippo.*

(s) *Xenoph. Memorab. lib.* ii. *in princip.*

IX. We have already seen *Xenophon* writing *Socrates's* Memoirs at *Scillus*, near *Olympia*. But in the XXII, to *Cebes* and *Simmias*, he is writing them at *Megara*; for there the

the Letter is dated. And in the xxi, to *Xanthippe*, he invites her to come to him to *Megara*. One would think, there was more Sophists than one had a finger in this Volume of Letters: or if he was but one Author, Nature gave him a short Memory without the blessing of a great Wit. 'Tis true, upon *Socrates*'s Execution, his Scholars left *Athens* for fear, (*t*) and retired to *Megara*, to the house of *Euclides*: which occasion'd our Sophist to bring *Xenophon* thither too. But he should have remembred, that while They were scared out of *Athens* for fear of their own Lives, He was safe at a great distance in the retinue of *Agesilaus*; from whose company he went to *Scillus*, without ever residing at *Megara*. Nay, the Sophist is so indiscreet, as to bring in *Xenophon* in *forma pauperis*, to beg and receive relief from *Cebes* and *Simmias*: whereas every body knows, that he got great riches in the War, (*u*) and lived in very great splendor and hospitality at *Scillus*.

(*t*) *Laert. in Euclid.*

(*u*) *Laert. in Xenoph. Xenoph. Exp. Cyri*, l.v. p.350.

X. In the xxiv Epistle, *Plato* says, he is quite weary of a City Life; and had therefore retired into the Country, διατρίβων ἐν μακρὰν Ἐφεσιάδων, which *Allatius* translates, *non longe ab Ephestiadibus*. He ought to have said, *ab Hephæstiadis*. For the true word in the *Greek*, is Ἡφαιστιάδων.

Plato had some Estate there, which he disposed of in his Will: τὸ ἐν Ἡφαιστιαδῶν χωρίον, as 'tis in (w) *Laertius*. *Hesychius*; Ἡφαιστιάδαι, Ἀθηναῖοι. *Stephanus Byz.* Ἡφαιστιάδαι, δῆμος Ἀθηναίων· τὰ τοπικὰ, ἐξ Ἡφαιστιαδῶν, &c. In the *Roman* Manuscript of *Laertius*, 'tis writ ἐνιφιστιάδων: which manner of spelling is found also in *Hesychius*, Ἰφίστιος, ἥρως, ἀφ' οὗ Ἰφιστιάδαι. If the Reader does believe, that our Letter-monger, like *Hesychius*, spelt the word wrong; he will be satisfied of the forgery: For surely, *Plato* himself knew the true name of his own Estate. But if he encline to absolve the Author, and lay the blame upon the Copyers; he may please to accept of this, only as an Emendation.

(w) *Vita Platon.*

XI. The XXVII Epistle is *Aristippus*'s to his Daughter *Arete*: which, perhaps, is the very same that is mention'd by *Laertius*; who, among the Writings of this Philosopher, names Ἐπιστολὴν πρὸς Ἀρήτην τὴν θυγατέρα. *Allatius*, indeed, is ready to vouch it: but I am not so easie of belief. For here are (x) two other Letters of his in this Parcel, and both of them writ in the *Doric* Dialect, though directed to *Athens*: because, forsooth, he was a *Cyrenæan*, and the *Doric* his native Tongue. Pray, what was the matter then, that in this he uses the *Attic*; though he writ from *Sicily*

(x) IX. & XI.

Sicily a *Dorian* Country, to his own Daughter at *Cyrene*? One would suspect, as I observed before, that a couple of Sophists clubb'd to this Collection. 'Tis true, we know, from *Laertius*; that of XXV *Dialogues* publisht by *Aristippus*, some were in the *Doric* Idiom, and some in the *Attic*. But that, I suppose, was done because of the variety of his Persons. In some Dialogues the Speakers were *Sicilians*, and those were writ in the *Doric*; and where the *Athenians* were introduced, the *Attic* was proper. But now, in this Letter to his Daughter, both Parties are *Dorians*; and so this Epistle should rather be *Doric*, than either of the other two.

XII. In the same Letter he mentions her Estate in *Bernice*, τὸ ἐν Βερνίκῃ κλῆμα. There is no question but he means Βερενίκη; perhaps that City not far from *Cyrene*. But there was nothing then in all *Afric* called by that name: for Βερενίκη is the *Macedonian* idiom for Φερενίκη, *the Victorious*. In that Countrey, φ was generally changed into β: as (*y*) instead of κεφαλὴ they said κεβλὴ; for φίλιππος, βίλιππος; for φαλακρὸς, βαλακρὸς; and so in others. So that Βερενίκη was unknown in *Afric*, till the *Macedonians* came thither: and indeed, they had their names from the Wives of the *Ptolemees*, a whole

(*y*) *Etym. Magn.* &c.

whole century of years after the date of this Letter.

XIII. He goes on, and tells his Daughter, *That if he should die, he would have her go to* Athens, *and live with* Myrto *and* Xanthippe *the two Wives of* Socrates. It was a common Tradition among the Writers of Philosophic History, that *Socrates* had these two Wives at once; and from thence our Sophist made them the compliment of a place in this Epistle. (z) There are cited as Authors of this story, *Callisthenes*, *Demetrius Phalereus*, *Satyrus*, and *Aristoxenus*, who all took it from *Aristotle* in his Book *Of Nobility*, περὶ Εὐγενείας. But Polygamy being against the Law of that Commonwealth, and the story therefore improbable; *Hieronymus Rhodius* produces a temporary Statute made in *Socrates*'s days, That by reason of the scarcity of People, a Man might marry two Wives at a time. But notwithstanding such a flush of Authorities, (a) *Panætius* the Stoic, a very great Man, writ expressly against all those named above; and, in the opinion of *Plutarch*, (b) *sufficiently* confuted the Tradition of the Two Wives. For my own part, I dare pin my belief upon two such excellent Judgments, as *Plutarch*'s and *Panætius*'s; and upon their credit alone, pronounce this Letter to be an Imposture

(z) *Laert. in Socrat. Plutarch. Aristid. Athen.* xiii. p. 556.

(a) *Athenæus, Plutarch.* ib.

(b) ἱκανῶς.

poſture. What grounds they proceeded on I cannot now tell; but I think there is apparent reaſon for rejecting the ſtory, even laying aſide their teſtimony. For none of *Socrates*'s acquaintance, not *Plato*, not *Xenophon*, ſay one word of this *Myrto*. *Ariſtotle*, we ſee, was the firſt that mention'd her: but (*c*) *Plutarch* ſuſpects that Book to be ſpurious. So that all this Tradition roſe at firſt from a Falſary, that counterfeited *Ariſtotle*'s name. Beſides, they do not agree in telling their tale; one ſays, that he had both Wives together: another, that *Myrto* was his firſt Wife, and the ſecond came after her death: another, that *Xanthippe* was the firſt. Let either of them come firſt, and our Epiſtles are falſe; for here we have Both ſurviving him, and living together. (*d*) One ſays, this *Myrto* was *Ariſtides*'s Daughter; another his Grand-daughter; and another, his Grandſon's Daughter. Whatſoever ſhe was; if ſhe outliv'd her Husband, according to the Letters, pray where was her Ladyſhip at the time of his ſuffering? (*e*) *Xanthippe*, like a loving Wife, attended him in the Priſon; but the other ne'er came near him. 'Tis a miſtake, ſure, that has paſt upon the world, that *Xanthippe* was the Scold: it ſhould ſeem, that *Myrto* had the better title

(*c*) Ibid.

(*d*) Ibid.

(*e*) *Plato Apolog.*

title to that honourable name. But what shall we say to *Hieronymus*, who brings you the very Statute, that gave allowance of two Wives at once? *Panætius*, you see, believed it not: and why may not a Statute be forged, as easily as these Epistles? If there was such an Act, there appears no great wisdom in it. It is certain, there is near an equality in the births of Males and Females. So that if some Men had two Wives for their share, others must go without: and what remedy would that be against the scarcity of People? Besides that by such a Law the Rich only would be accommodated, who were able to maintain a couple: the poorer sort, who are always the most fruitful, would be in worse circumstances than before. And without doubt, a very strong interest would have been made against the passing of such a Bill; (*f*) as we know what the *Roman* Matrons did, when *Papirius Prætextatus* made a like story to his Mother. 'Tis very odd too, that no body but *Hieronymus* should ever hear of this Statute; and He too a suspected Witness, because he brings it to serve a turn, and to help at a hard pinch. But certainly such a Political Occurrence, had it been true, could never have lain hid from the whole tribe of Historians. It had

(*f*) *A. Gellius*, li. 1. c. 23.

had very well deserved not only a mention, but a remark. But how could it possibly escape the fancy and spleen of all the Comœdians of that Age? how could they miss so pleasant an argument of jest and ridicule? Those that are acquainted with the condition of those times, will look upon this as next to a Demonstration. But let us grant, if you will, half a dozen Wives to *Socrates*; yet nevertheless our Epistles will be still in the mire. For here our Sophist makes the two Women live amicably together: which is pretty hard to believe: for (as (*g*) those that make them Two, tell the story of them) while their Husband was alive, they were perpetually fighting. But, which is worse yet, there are other Letters in the bundle, that plainly suppose *Socrates* to have had but one Wife. (*h*) He himself, writing to some body, tells him this domestic news, *That* Xanthippe *and the Children are well:* but says not a word of my Lady *Myrto*. (*i*) *Xenophon* sends a Letter top full of kindness and commendation to *Xanthippe* and the Little ones; but it was very uncivil in him, to take no notice of the other; since, according to the story, she brought her Husband the more Children. Nay, if we allow this Letter of *Xenophon*'s to be genuine, he play'd a false and dirty

(*g*) *Aristoxenus apud Theodoret*, Serm. xii. ad *Græcos*.

(*h*) Ep. iv.

(*i*) Ep. xxi.

dirty trick, much against his character. For at the date of this Epistle, if we believe the very next (*k*) to it, he was writing *Socrates's Memoirs*. So that while he here in his Letter wheedles the poor Woman, and makes her little Presents, and commends her for her love to her Husband, and for many good qualities; in his Book (*l*) he traduces her to that present Age, and to all Posterity, for the most curst and devilish Shrew, *that ever was or ever would be.* Nay, which makes it the baser, he was the only Man that said this of her; for neither *Plato* nor any of the old *Socratics* writ a word about her Scolding. Which made (*m*) *Athenæus* suspect it was a Calumny: especially since *Aristophanes* and his Brethren of the Stage, in all their Raillery and Satyr upon *Socrates*, never once twitted him about his Wife. Well, let that be as it will: but what shall we say to *Xenophon's* double dealing? For my part, rather than I'll harbour such a thought of that great Man, I'll quit a whole Cart-load of such Letters as these.

(*k*) Ep. xxii.

(*l*) *Xenoph. Conviv.* p. 876.

(*m*) Lib. v. p. 219.

XIV. *Xenophon*, in the xv Letter, tells this story of *Plato*, to whom he bore a grudge; That he should say, *None of his Writings were to be ascribed to himself, but to* Socrates *young and handsom*; Φησὶ μηδὲν ἔναι ποίημα αὐτῷ

αὐτῷ, Σωκράτες μέντοι νέος ἦν καλῶς ὄντως. Now, this ſentence is taken out of *Plato*'s Second Epiſtle to *Dionyſius* the Younger: Οὐδ' ἔστι σύγγραμμα Πλάτωνος οὐδὲν, οὐδ' ἔσται· τὰ δὲ νῦν λεγόμενα Σωκράτους ἐστὶ, καλοῦ ἔτι νέου γεγονότος. Here's a blunder with a witneſs, from the Sophiſt's ignorance in Chronology. For his forged Letter of *Xenophon* bears date immediately after *Socrates*'s death: but the true one of *Plato*, which *Xenophon* here alludes to, is recenter by a vaſt while. For *Dionyſius* came but to the Crown Olymp. CIII, 1. which is XXXII years after the Tryal of *Socrates*.

I muſt obſerve one thing more, that by no means ſhould be omitted. There were formerly more Epiſtles of *Xenophon* extant, than appear in this Collection. A large fragment is cited in (*o*) *Stobæus*, out of his Letter to *Crito*; (*p*) two fragments out of a Letter to *Sotira*; (*q*) and two more out of one to *Lamprocles*: none of which are found here in *Allatius*'s Parcel. *Theodoret* produces a paſſage out of a Letter of his to *Æſchines*; wherein he jerks *Plato* (*r*) *for his Ambition and Voluptuouſneſs; to gratifie which, he went to* Sicily, *to* Dionyſius's *Court.* (*s*) *Euſebius* has this paſſage and more out of the ſame Epiſtle: and the whole is extant in (*t*) *Stobæus*. What ſhall

(*o*) Serm. 81.
(*p*) Serm. 120, 123.
(*q*) Serm. 5.
(*r*) Ἔρως τυραννίδος, ἢ ἀντὶ λιτῆς διαίτης Σικελιώτης γαστρὸς ἀμέτρου ἐφίεται.
(*s*) *Præp. Evang.* XIV. 12.
(*t*) Serm. 78.

shall we say? that the true Letters of *Xenophon* were extant in those days? or that those too were a Cheat, and belong'd to the same Volume whence these of *Allatius* were taken? And so, as I observ'd before, they will be older than *Libanius*'s time. I am afraid it will be thought ill manners to question the judgment of *Eusebius* and *Theodoret*. But we know, (*u*) they have made other mistakes of a like nature: and the very Letter which they cite, betrays it self to be a counterfeit. *Xenophon*, we see, reproaches *Plato*, in a Letter to *Æschines*. If this were true, it was a most rude affront to the Person he writ to, whose friendship he courts so much in the rest of his Letter. For *Æschines* himself was guilty of the very same fault, and is wounded through *Plato*'s side. 'Tis well known, that He too, as well as *Plato* and *Aristippus* and others, made a Voyage to *Sicily*, and struck in with *Dionysius*; (*w*) and that purely for Money and the Table. (*x*) *Lucian* says, He was Parasite to the Tyrant; and (*y*) another tells us, he liked his Entertainment so well, that he did not stir from him, till he was deposed. I would ask any Man now, if he can still believe it a genuine Letter; let him have what veneration he can for the Learning of *Eusebius*.

(*u*) See *Dissert. upon Jo. Malal.*

(*w*) *Laert. & Suidas in Æsch. Plut. de Adulat.*

(*x*) *In Parasito.*

(*y*) *Polycritus apud Laert.*

In

In the beginning of this Diſcourſe, I have ſaid, *That I heard of none, that, ſince the firſt publication of theſe Letters, called them into queſtion.* But I was ſhewn to day (after mine was in the Preſs) in Biſhop *Pearſon's Vindiciæ Epp. Sancti Ignatii*, a (z) Digreſſion made on purpoſe againſt *Socrates's Epiſtles*. I muſt confeſs, with ſome ſhame, I had either never read that Chapter, or utterly forgot it. But I am glad now to find that imcomparable Man both to think it worth going out of his way to diſcover this Impoſture, and to confirm me in my judgment by the acceſſion of his great Authority. There is nothing there diſagreeing with what I had ſaid; but that his Lordſhip allows the Epiſtle to *Æſchines*, cited by *Euſebius*, to be genuine: which I had endeavoured to convict of a forgery. I referr it to thoſe that pleaſe to read both; whether they think I have juſt reaſon to change my opinion: eſpecially when I ſhall tell them, That not *Æſchines* only, but even *Xenophon* himſelf made a Viſit to *Dionyſius*. I have * *Athenæus* for my Authority, a Witneſs beyond all exception. Ξενοφῶν γὲν ὁ Γρύλλε παρὰ Διονυσίῳ, &c. Xenophon (ſays he) *the Son of* Gryllus, *when at* Dionyſius *the* Sicilian's *Table the Cup-bearer forced the company to drink;*

(z) Par. II. p. 12, 13.

* Lib. x. p. 427.

Pray, says he, Dionysius (speaking aloud to the Tyrant,) *if your Butler forces Wine upon us against our wills, why may not your Cook as well compell us to eat?* So that if we suppose the Letter genuine, the absurdity will double it self; both Parties being guilty of the very same thing, that is charged upon *Plato*.

OF

EURIPIDES's EPISTLES.

'TIS a bold and dangerous venture, to attack *Euripides's Letters*; since a very Learned *Greek* Professor has so passionately espoused them; that he declares it to be (*a*) *great Impudence and want of all Judgment* to question the Truth of them. I do not care to meddle with Controversie upon such high Wagers as those: but if I may have leave to give my opinion, without staking such valuable things as Modesty and good Sense upon it, I am very ready to speak my mind candidly and freely.

(*a*) *Perfricta frontis & judicii imminuti.* Eurip. Edit. Cantab. par. ii. p. 523.

I. There are only five Epistles now extant, ascribed to *Euripides*: but without doubt there were formerly more of them;

them; as we have seen just before, that we have not now the whole Sett of *Xenophon's* Letters. Neither can we suppose a Sophist of so barren an Invention, as to have his Fancy quite crampt and jaded with poor Five. We have here a peculiar happiness, which we wanted in the rest; to know whom we are obliged to for the great blessing of these Epistles. *Apollonides*, that writ a Treatise Περὶ κατεψευσμένης Ἱστορίας, '*About falsified History*, says, one (*b*) *Sa-* '*birius Pollo* forged them, the same Man 'that counterfeited the Letters of *Aratus*.' This we are told by the Writer of *Aratus's* Life, no unlearned Author: who does not contradict him about these of *Euripides*; but for *Aratus's*, he says, that, bating this *Apollonides*, every body else believed them to be genuine. I cannot pass any judgment of what I never saw; for *Aratus's* Letters are not now to be had: but if they were no better than these of our Tragedian, I should, in spite of the common vogue, be of *Apollonides's* mind; and I wish that Book of his were now extant. One may know, by the manner of the Name, that this *Sabirius Pollo* was a *Roman*: but I do not find such a Family as the *Sabirii*, nor such a Sirname as *Pollo*. What if we read *Sabinius*, or *Sabidius Pollio*?

(*b*) Σαβίριος Πόλλων.

Non amo te, Sabidi; nec possum dicere quare.

If that *Sabidius* in *Martial* was the forger of our Epistles; though the Poet could give none, yet I can give a very good reason, why I do not love him.

But the Learned Advocate for the Letters makes several Exceptions against the Testimony of *Apollonides*. As first, *That we may fairly inferr from it, that a great many others believed them to be true.* Alas! How many more, both Ancients and Moderns, believed *Phalaris*'s to be true? If that argument would have done the work, I might have spared this Dissertation. *But prove, that these Letters now extant are the same that were forged by* Sabirius. Commend to me an Argument, that, like a Flail, there's no fence against it. Why, had we been told too, that he made *Phalaris*'s *Epistles*: yet how could we *prove*, unless some passages were cited out of them, that they were the same that we have now? But though I cannot demonstrate that these are *Sabirius*'s; yet I'll demonstrate them by and by to be an Imposture; and I hope then it will be no injustice to lay them at his door. *But 'tis an evidence, that the true* Epistles of Euripides *were once extant; because some body thought it not improper to father false ones upon him.* Now, I should think the very contrary; that the

the Cuckow does not lay her Egg, where the Neſt is already full. At leaſt, I am reſolved I'll never go a book-hunting after the genuine Epiſtles of *Phalaris*; though ſome body has cheated the World with a parcel of falſe ones.

II. It might eaſily have happen'd, tho' we ſuppoſe the Letters ſpurious, that in ſo ſmall a number as Five, there could be nothing found to convict them by. But ſo well has the Writer managed his Buſineſs; that every one of them has matter enough to their own Detection. The laſt and principal of them is dated from *Macedonia*, in anſwer to ſome reproaches, that were caſt upon him at *Athens* for his going to *Archelaus*. *As for what you write from* Athens; ſays he, *pray know, that I value no more,* ὧν νῦν Ἀγάθων ἢ Μέσατος λέγει, *what* Agatho *or* Meſatus *now ſay; than I formerly did, what* Ariſtophanes *babbled.* Here we have the Poet *Agatho*, (for without doubt he means the Poet, ſince he has join'd him with *Ariſtophanes*) reſiding at *Athens*, and blaming *Euripides* for living with *Archelaus*. Now, could any thing be more unfortunate for our *Sabirius Pollo*, than the naming of this Man? For even this *Agatho* himſelf was then with *Archelaus* in (c) *Euripides*'s company: beſides that they were always good

(c) *Ælian.* II, 21. & XIII, 4. *Plut. in Apoph. Schol. Ariſtoph.* Βατραχ.

good friends and acquaintance, not there only, but before at *Athens*.

But perhaps some may suspect, it was another *Agatho* a (*d*) Comic Poet, that was meant in the Letter, and not the famous *Agatho* the Tragedian. This I find to be the Opinion of the Learned Person above-named. But I will make bold to expunge this Comic *Agatho* out of the Catalogue of Mankind. For he sprung but up, like a Mushroom, out of a rotten passage in *Suidas*; who, after he has spoken of *Agatho* the Tragic Poet, has these words; κωμῳδοποιὸς Σωκράτες διδασκάλε· ἐκωμῳδεῖτο ὃ εἰς πολύτητα: which his Interpreters (*Wolfius* and *Portus*) thus translate, *Fuit & alius Agatho Comœdiarum Scriptor.* But there's nothing like *Fuit & alius* in the Original; but the same *Agatho* is here meant, that was mentioned before. This they might have known from the following words, ἐκωμῳδεῖτο ὃ εἰς πολύτητα, *he was libelled for his Effeminateness.* For whom can that belong to, but to *Agatho* the Tragœdian; whom (*e*) *Lucian* ranks with *Cinyras* and *Sardanapalus*? Do but read *Aristophanes's Thesmophoriazusæ*; and you'll see him ridiculed upon that score for some pages together. The Scholiast upon Βάτραχοι of

(*d*) *Vita Eurip. p. 29. Ed. Cant.*

(*e*) Πάναβρόν τινα Σαρδανάπαλον, ἢ Κινύραν, ἢ αὐτὸν Ἀγάθωνα ἢ τραγῳδίας ἐπήρεσον ποιητήν. *Rhet. Præc.*

of the same Poet; Ἀγάθων (says he) ἔτος τραγικὸς ποιητὴς ὅτι μαλακίᾳ διεβάλλετο. Here you see, it is expresly said, (*f*) Agatho *the Tragœdian was traduced as Effeminate.* It follows presently in the same Scholiast; Οὗτος δὲ ὁ Ἀγάθων κωμῳδοποιὸς τοῦ Σωκράτες διδασκάλε; where we have the very words of *Suidas* applied to the Tragœdian: ἔτος, *this same* Agatho *was a Comœdian,* Socrates *being his Master:* not *another*, as the Translators of *Suidas* interpolate the Text. But is it true then, that our spruce *Agatho* writ Comedies too? Nothing like it; though the learned (*g*) *Gregorius Gyraldus* affirms it from this very passage. 'Tis a mere oscitation of our Scholiast, and of *Suidas* that gaped after him: the occasion and ground of the story being nothing but this. *Plato's Convivium* was in the House of this *Agatho:* in the (*h*) conclusion of which, *Socrates* is introduced proving to *Agatho* and *Aristophanes; That it belonged to the same Man, and required the same Parts, to write both Comedy and Tragedy; and that he that was a skilful Tragœdian, was also a Comœdian.* Hence have our wise Grammarians dress'd up a fine story, That *Agatho* was a Comœdian, and of *Socrates's* teaching. And now, I hope, I have evidently proved the thing that I proposed;

(*f*) P. 138.

(*g*) *Dialog. de Poet.*

(*h*) P. 336. Τὸν τέχνῃ τραγῳδοποιὸν ὁμοῦ καὶ κωμῳδοποιὸν εἶναι.

to the utter disgrace of our admired Epistles.

III. *Euripides*, we have seen, did not value one farthing, *what either* Agatho *or* (*i*) Mesatus *said of him.* I would gladly be better acquainted with this same *Mesatus*; for I never once met with him but here in this Letter. He must be a Brother of the Stage too, by the company he is placed in: But what was the matter? Was he so hiss'd and exploded, that he durst never shew his head since? I have a fancy, he was of the same family with (*k*) *Phalaris*'s two Fairy Tragœdians, *Aristolochus* and *Lysinus*: and that these Letters too are a kin to those of the Tyrant. But, perhaps, you'll say, this *Mesatus* is but a fault in the Copies. It may be so: and I could help you to another Tragœdian of those times, not altogether unlike him; one *Melitus*, the same that afterwards accused *Socrates*; who was likely enough to hate *Euripides*, that was the Philosopher's friend. Or I could invent some other medicine for the place: but let those look to that, that believe the Epistles true, or think them worth the curing.

(*i*) Ὁ Μέσατος.

(*k*) Epist. lxiii, & xcvii.

The very Learned Defender of the Epistles, one of a singular Industry and a most diffuse Reading, has proposed some

some Objections against the Letters, communicated to him by a private Hand. That private Person, at the request of the Editor, imparted his opinion to him in a very short Letter: to which he had no Answer returned; till he found it, with some surprize, brought upon the stage in print; and his Reasons routed and triumph'd. But let us see if we can rally them again: perhaps they may keep their ground in a second Engagement. (*l*) *Eurip.* Edit. Cant. p. 27, & 523.

IV. Our friend *Sabirius Pollo*, to make the whole Work throughout worthy of himself, has directed this same Letter to *Cephisophon*, who was *Euripides*'s Actor for his Plays. For he had often heard of *Cephisophon*; and so he would not let him pass without a share in his Epistles. But he should have minded Time and History a little better, if he hoped to put himself upon Us for the Author he mimic's. 'Tis true, *Cephisophon* and our Poet were once mighty dear acquaintance: but there fell out a foul accident, that broke off the friendship. For *Euripides* caught him Acting for him, not upon the Stage, but in private with his Wife. Which business taking wind abroad, and making a perpetual Jest, was one of the main reasons why he left *Athens* and went to *Macedonia*. And is it likely, after all this, that our Poet

Poet should write a Letter to him, as soon as he got thither? that he should use him as his most intimate Friend, nearer to him than his own Children? I know, there are some so fond of our Epistles, that *they value all this as nothing*. *Cephisophon* is so much in their Books; that whatsoever is said against him, must be calumny and detraction. Give me an Advocate, that will stick close and hang upon a Cause. By being their Editor, he is retain'd for the Letters; and therefore he must not desert his Client. But why shall no Testimony be allowed, that touches *Cephisophon*? Are not (*m*) *Aristophanes* and his Commentator, and *Suidas* and (*n*) *Thomas Magister* all lawful and good Evidence? And is there one single Witness against them in his behalf? Not a Writer is now extant, that mentions his name, but what tells the story of him: and if we must not believe them; we shall want new Evidence to prove, there ever was such a Man.

(*m*) P. 167, 184.

(*n*) In *Vita Euripidis*.

V. In a Disquisition of this nature, an inconsistency in Time and Place is an argument that reaches every body. All will cry out, that *Phalaris, &c.* are spurious, when they see such breaches upon Chronology. But I must profess, I should as fully have believed them so; though

though the Writers had escaped all mistakes of that kind. For as they were commonly men of small endowments, that affected to make these Forgeries; a great Man disdaining so base and ignoble a work: so they did their business accordingly; and expressed rather themselves, than those they acted. For they knew not how to observe Decorum, in a Quality so different from their own: like the silly Player, that would represent *Hercules*; tall indeed, but slender, without bulk and substance. Let us see the conduct of this Author: In the first Letter, *Archelaus* sends *Euripides* some Money; and our Poet, as if his Profession were like a Monastic Vow of Poverty, *utterly refuses it.* And why, forsooth, does he refuse it? Why, *it was too great a Summ for his condition.* Yes, to be sure; when a Sophist makes a Present, the greatest Summ costs no more than the least. *But it was difficult to be kept, and the fingers of Thieves would itch at it.* Alas for him; with the expence of one Bag, out of many, he might have provided a Strong Box, and new Doors and Locks to his House. But why could he not accept a Little of it? Even (*o*) *Socrates* himself and *Xenocrates* took a modicum out of Presents, and return'd the rest again. And is a Poet more self-denying,

(*o*) *Laertius, in Socrat & Xenoc.*

denying, than the most mortified of the Philosophers? But the best of all, is, *That* Clito *the King's chief Minister threatned to be angry with him, if he refused it.* What, could *Clito* expect before-hand, that the Present would be refused? The most sagacious States-man, sure, that ever Monarch was blest with. *Alexander* could not fore-see such a thing; but was mightily surprized, when *Xenocrates* would not receive some Money that he sent him: "(*p*) What, says he, has *Xenocrates* no "Friends to give it to, if he need it not "himself?" As for our Poet, he had Friends, I assure you; but all of his own kidney, *men of Contentment, that would not finger a penny of it,* τὸ αὐταρκὲς ἡμῖν τε ἐν τοῖς φίλοις παρὸν. What would one give to purchase a Sett of such acquaintance? And yet, I know not how, in the Fifth Letter, their appetites were come to 'em; For in that, *Euripides* himself, from *Archelaus*'s Court, shared some Presents among them; and we hear not one word, but that all was well taken.

(*p*) *Plut. Apoph.*

VI. The rest of this Letter is employed in begging pardon (*q*) *for the two Sons of a* Pellæan *old fellow*, who had done something to deserve Imprisonment. And the Third and Fourth are Common Places of Thanks for granting this request. Now, besides that

(*q*) Πελλαίος γήρων.

that the whole Business has the Air and Visage of Sophistry; for this same is a mighty Topic too in *Phalaris's* Epistles: 'tis a plain violation of good Sense, to petition for a Man without telling his Name: as if *Pella* the royal City had no Old Man in it but one. How can such an Address be real? But to this they give a double Answer; *That a Sophist, if this was one, could not be at a loss for a Name: he might easily have put one here; as hereafter he names* Amphias, Lapretes *and others.* But the point is not, what he *might* have done, but what he *has* done. He *might* have named some other Poet at *Athens*, and not *Agatho* that was then in *Macedonia.* All those mistakes and blunders of *Phalaris* and the rest *might* easily have been avoided, had the Writers had more History and Discretion. (r) *But he had writ a Letter before this about the same business; and there we must suppose he had mention'd his name.* This indeed would be something, if it would carry water. But though the Sophist has told you so; do not rashly believe him. For it is plain, that pretended Letter must have been sent to *Archelaus*, before this vast Present came from him. Why then did not the same Messenger that brought the Money, bring the

(r) Πεμπτε-
ον ἐπιστο-
λαμεν σοι.

the Grant too of his Petition? Would the King, that did him this mighty Honour and Kindness, deny him at the same time that small and just Request? For the crime of those Prisoners was surely no hainous business. Had it been a design to assassinate the King, he would never have interceded for them. The Charge against them was a venial fault: or were it the blackest accusation, their Innocence at least would clear them: for our Poet himself tells us, (s) *They had done no body any wrong.*

(s) Οὐδὲν ἠδικεῖν εἰργασαν.

VII. The Second Epistle is to *Sophocles*, whom he makes to be shipwrack'd at the Island *Chios*; the Vessel and Goods being lost, but all the Men saved. That *Sophocles* was at *Chios*, we are informed by (t) *Ion Chius* the Tragœdian; who relates a long conversation of his there. If our Author here means the same Voyage, as probably he does; he is convicted of a cheat. For (t) then *Sophocles* was Commander of a Fleet with *Pericles* in the *Samian* War; and went to *Chios*, and thence to *Lesbos*, for auxiliary Forces. But our Mock-*Euripides* never thinks of his publick Employment; but advises him to return home at his leisure; as if it had been a Voyage for Diversion. *Yes*, says his Advocate; *but why might he not be at* Chios *another*

(t) *Athen.* XIII, 603.

(u) Ibid. & *Thucyd.* I, 75.

another time, though no body speak of it, about private Affairs? Yes; why not, indeed? For *Sophocles* was so (*w*) courteous and good-natur'd a Man, that, to do our Letter-monger a kindness, he would have gone to every Island in the *Archipelago*. But 'tis hard though, that a good Ship must be lost, and our Poet swim for't, to oblige the little Sophist. For I fear the Vessel was cast away, purely to bring in (*x*) *the great loss of* Sophocles's *Plays*. Alas! alas! Could he not go over the water, but he must needs take his Plays with him? And must *Euripides*, of all men, lament the loss of them; whose own Plays must, probably, have truckled to them at the next Feast of *Bacchus*? Must *Euripides*, his Rival, his Antagonist, tell him, (*y*) *That his Orders about family affairs were executed*: as if He had been employ'd by him, as Steward of his Household?

(*w*) *Ion Chius*, ib. *Aristoph. Ranis.*

(*x*) Ἡ τοὺς δεξαμένας συμφορεῖ.

(*y*) Τὰ οἰκοι ὡς χρὴ νεν ον-τα.

VIII. The Fifth Letter is a long Apology for his going to *Macedonia*. "Can they "think, says he, that I came hither for "love of Money? I should have come then, "when I was younger; and not now, "to lay (*z*) my bones in a barbarous "Country, and make *Archelaus* richer "by my Death." I observed it, as no small mark of a Sophist, That our Author fore-

(*z*) Ἵνα ὀστᾶ βαρβάρῳ γῇ παραδώ-σωμεν.

foretells, he was to die in *Macedonia*; where, we know, he was worried to death by a pack of Dogs. *But what wonder*, ſay they, *if an Old Man of Seventy predict his own death?* I do not queſtion, but our Poet might preſage himſelf to be Mortal. But 'twas an odd gueſs to hit upon the time and place, when and where he was to die. For, what ground was there to be ſo poſitive? The Letter, we ſee, carries date juſt after his arrival at Court? He had, as yet, had very ſhort trial, whether all things would continue to his liking. And we have no reaſon to ſuppoſe, that he came thither for good and all; never to ſee *Athens* again. Might he not, by ſome accident, or ſupplanted by ſome rival, loſe the King's favour? Or, was he ſure His life would laſt as long as his own? 'Twas a violent death, and not mere Age and Crazineſs, that took our Poet away at laſt: and he knew *Sophocles* to be then alive and hearty and making of Plays ſtill; that was Fourteen years older than himſelf. In theſe circumſtances to be ſo poſitive about his dying there, was a Prophecy as bold as any of the *Pythian* Oracle. *But*, ſay they, *he gives a hint too, that* Archelaus *might be depoſed: which a Sophiſt would not ſay, becauſe it never came to paſs.* That was true

and

nd came to pass every day, that he *ight* be deposed: and he does not sug- est, that it actually would be so; for he xpressly says, (*a*) *God would always stand y the King, and support him.* But indeed, s they interpret a passage there; it looks s if he had foreboded real Mischief; Οὐδὲ ἐνιδόϛ, ὅτι οἴχεται ὁ καιρὸς εἰς ἀνθρώπων εὐεργεσίαν, ἀνεθεὶς ῥᾳδίᾳ ἤδη. Which last words they translate, *ubi jam destitutus fueris & abdicatus,* "when you are de- "serted and deposed." But with all due submission, I will assume the freedom of changing the version. For ἀνεθεὶς and ῥᾳδίᾳ belong to the word καιρὸς, and not to *Archelaus*: and the distinction is to be put thus; ὅτι οἴχεται ὁ καιρὸς, εἰς ἀνθρώπων εὐεργεσίαν ἀνεθεὶς, ῥᾳδίᾳ ἤδη; *Tempus ad exercendam benignitatem con- cessum*; "You will not grieve, that the "time is gone past recalling, which was "granted you by God to do good to "Mankind in." This, I suppose, is now clear enough; and *Archelaus* is in no danger of being deposed by this sentence. But let us examine our Author's next words; (*b*) *To make Archelaus richer by my death.* A very good Thought indeed, and worthy of *Euripides*. But pray what could the King get by his death? Would the Poet be compell'd to make him his

(*a*) Παρέσται μὲν ἀεὶ ὁ θεὸς, καὶ σώσει κύριον.

(*b*) Ἵνα πλείονα Ἀρχέλαον κατὰ λῆρον μεν χρήματα.

Heir; as some were forced by the *Roman* Emperors? Or, would the King seize upon his Estate, and defraud the true Inheritor? If the Poet had such suspicions as these, he would never have gone to him. But though he had left all to him at his death; what would the King have been richer for him? For surely *Euripides*, having setled affairs at home, carried no great Stock with him to *Macedonia*; unless he thought *Archelaus* would make him pay for his Board. He might well expect to be maintain'd by the King's (*d*) Ep. v. Liberality; (*e*) as he found it in the Event. The King therefore, were he his sole Heir, would only have received again, what himself had given before. Nay, even a great part of that had been lost beyond recovery. For our Poet, by the very first Messenger, had packt more away to *Athens*, that *Archelaus* had given him, than all that he carried with him could amount to; perhaps, than all he was worth before.

IX. But he has more still to say to those, that blamed him for leaving *Athens*. "If

(*d*) Τὸν αὐτὸν τοῦτον πλοῦτον.

"Riches (says he) could draw me to "*Macedonia*; why did I refuse (*d*) *these* "*very same Riches*; when I was (*e*) *young*,

(*e*) Νέος τε καὶ μέσος τὴν ἡλικίαν.

"or *middle-aged*; and while my Mother "was alive; for whose sake alone, if

"at

"at all, I should have desired to be "rich?" He alludes here to the First Letter, (and perhaps to others now lost,) where he refuses an ample Summ of Money sent him by *Archelaus*. Alas, poor Sophist! 'twas ill luck he took none of the Money, to Fee his Advocates lustily: for this is like to be a hard brush. For how could the Poet, while young, or middle-aged, refuse Presents from *Archelaus*? since, according (*f*) to most Chronologers, he was about Seventy; and, by the most favourable account, above Sixty; when *Archelaus* came to the Crown.

(*f*) *Died, Sicul. & alii apud Athen.* l. v. p. 217.

X. But what a dutiful Child had Mother *Clito* the Herb-woman? *For her sake alone, her Son* Euripides *could wish to be Rich*; to buy her Oil to her Sallads. But what had the Old Gentleman the Father done, that he wishes nothing for His sake? And how had his (*g*) three Sons offended him, that They have no share in his good wishes? 'Tis a fine piece of conduct, that our Sophist has shewn. He had read something of our Poet's Mother; for she was famous in old Comedy for her Lettuce and Cabbage: but having heard nothing of his Sons; he represents him through all his Letters, as if he had no Children. As here, the only motive to desire Wealth, is his care of the *Old Woman*: and when she

(*g*) *Suidas, Tho. Magister*, &c.

she is supposed to be dead, all his concern is only for his *Friends*. In the First Letter, (*b*) He and his Friends are such contented men, that they refuse the royal Gift. Not a word of the three young Sparks; who, 'tis hard to think, were so self-denying. In the Fifth, he keeps none of the King's Presents by him, but sends all away to *Athens*, to be shared among his (*i*) Friends and Companions. How, again, would the young Gentlemen look, to be forgot thus by their own Father? If it be suspected, in favour of the Letters, that the Sons might be all dead before; I can soon put a stop to that, from a good Evidence, *Aristophanes*; who, in a Play made (*k*) the very Year of our Poet's death, mentions the Sons as then alive.

(*b*) Ἡμῶν τε καὶ τῶν φίλοις.

(*i*) Τοῖς ἑταίροις καὶ ὁπλίταις.

(*k*) Βάτραχοι, P. 184. Edit. *Basil.*

XI. The *Romans* may brag as much as they please of *Mecœnas* and others: but of all Patrons of Learning, *Archelaus* of *Macedonia* shall have My commendations. Within two or three days after *Euripides*'s arrival, he makes him a Present of (*l*) *Forty Talents*. Which was a greater Summ of Money than our Poet could ever have raised before; though all that he had should have been sold four times over. The Great *Themistocles* (*m*) was not worth Three Talents, before he meddled with Public Affairs: and (*n*) Two Talents was thought a good

(l) Ep. v.

(*m*) Plut. *Themist.*

(*n*) Terent. *Heaut.*

a good Portion for a substantial Man's Daughter. *Alexander the Great*, when he was Lord of the World, sent *Xenocrates* the Philosopher a Present of Thirty Talents, or, as others say, Fifty; which (o) *Cicero* calls a vast Summ, especially for those times. But *Alexander*'s natural Munificence was stimulated and exalted to that extraordinary Act of Bounty, out of a peak (p) he had to *Aristotle*. How generous then, nay, how profuse was *Archelaus*; that out of his little and scanty Revenue could give as much, as his great Successor in the midst of the *Persian* Treasures? But all this is spoil'd again; when we consider, 'tis a Sophist's Present: who is liberal, indeed, of his Paper Notes, but never makes solid Payment.

(o) *Cicero*, Tusc. v. *Pecunia temporibus illis, Athenis præsertim, maxima.*

(p) *Laert. in Arist.*

And now, I suppose, it will be thought no great matter, whether *Sabirius Pollo*, as *Apollonides* affirms, or any other unknown Sophist, have the Honour of the Epistles. I will take my leave of Him and Them; after I have done the same kindness to *Apollonides*, that I did to *Sabirius*. For as I read the name of the one, Σαβίδιος Πολλίων, instead of Σαβίειος Πόλλων: so, for Ἀπολλωνίδης ὁ Κηφεύς, I dare make bold to substitute Ἀπολλωνίδης ὁ Νικαεύς. The former was never heard of but here. This latter is mention'd

tion'd by *Laertius*, *Harpocration* and others. He writ several Books, and dedicated one of them (*q*) to *Tiberius*. The time therefore agrees exactly with this emendation; for living in that Emperor's days, he might well cite a *Roman* Author *Sabidius Pollio*. But to take away all manner of scruple; this very Book *About Falsified History* is ascribed to *Apollonides Nicenus* by (*r*) *Ammonius*; Ἀπολλωνίδης, says he, ὁ Νικαεὺς ἐν τῷ τρίτῳ περὶ κατεψευσμένων; just as the Writer of *Aratus*'s Life says; Ἀπολλωνίδης ὁ Κηρεὺς ἐν τῷ δευτέρῳ περὶ κατεψευσμένης Ἱστορίας.

(*q*) *Laert. in Timone.*

(*r*) v. Καὶ ποίκησις. *De Differ. Vocab.*

OF ÆSOP's FABLES.

I Could easily go on, and discover to you many more Impostures of this kind, The Epistles of *Anacharsis*, *Heraclitus*, *Democritus*, *Hippocrates*, *Diogenes*, *Crates*, and others. But perhaps I may be *exhorted* hereafter to put this Dissertation into *Latin*, with large Additions: till which time I will adjourn the further Discourse upon those several Authors; and proceed now to the last thing proposed, *The Fables of Æsop*.

And

And here I am glad to find a good part of the Work done ready to my hand. For Monsieur *Bachet S. de Meziriac*, has writ *The Life of Æsop*, in *French*: which Book, though I could never meet with it, I can guess from the great Learning of the Author, known to me by his other Works, to have in a manner exhausted the Subject. *Vavasor* too, *De Ludicra Dictione*, ascribes the present *Fables* to *Maximus Planudes*, and not to *Æsop* himself. See also a great deal upon this Head in the late *Historical Dictionary* of Mr. *Baile*. All which make me look upon Sir *W. T.*'s mighty Commendation of the *Æsopean Fables* now extant, which is the occasion of this Treatise, to be an unhappy Paradox; neither worthy of the great Author, nor agreeable to the rest of his excellent Book. For if I do not much deceive my self, I shall soon make it appear, That of all the Compositions of the *Æsopic Fables*, these that we have now left us, are both the Last and the Worst. Though I do not intend a set Discourse; but only a few loose things, that I fansie may have escaped the Observation of Others.

I. 'Tis very uncertain, if *Æsop* himself left any *Fables* behind him in writing: the Old Man in (s) *Aristophanes* learn'd his

(s) *In Vespis*, p. 357.

his Fables in Converſation, and not out of a Book:

Αἰσωπικὸν γελοῖον ἢ Συβαριτικὸν
Ὃν ἔμαθες ἐν ταῖς συμποσίοις ——

There's another (*t*) paſſage in the ſame Poet, Οὐδ' Αἴσωπον πεπάτηκας; which (*u*) *Suidas*, and from him *Eraſmus*, *Scaliger*, &c. affirm to be uſed proverbially; *You have not read ſo much as* Æſop, (ſpoken of Ideots and Illiterates.) From whence one might conclude, that *Æſop* wrote his own Fables, which were in every bodies hands. But it plainly appears from the Poet himſelf, that it is not a Proverbial Saying: For when One had ſaid, *He never heard before, that Birds were older than the Earth:* the Other tells him, *He is unlearned, and unacquainted with* Æſop; who ſaid, "That the *Lark* was the "firſt of Things; and ſhe, when her "Father died (after he had laid five "days unburied, becauſe the Earth was "not yet in being) at laſt buried him "in her own Head." Now, what is there here like a Proverb? But pray take notice, that this Fable is not extant in our preſent Collection; a good teſtimony, that Ours are not of the *Phrygian*'s own Compoſing.

(*t*) *In Avibus*, p. 387.

(*u*) Παπῆγαυ.

I will

I will mention another place of our Poet; that I may, on this occasion, correct a gross Error of the Scholiast. 'Tis extant *in Vespis*, p. 330.

Οἱ δὲ λέγουσι μύθους ἡμῖν, οἱ δ' Αἰσώπου τι γε- [λοῖον.

Where he interprets Αἰσώπου γελοῖον; of one *Æsop* a *ridiculous Actor of Tragedy*. But our Scholiast himself is more ridiculous: if it was He that writ this; and not some trifler, that foisted it in among the other's Annotations. For there was no *Æsop* a *Greek* Actor in the days of *Aristophanes*: he mistakes him for the famous *Æsop* in *Cicero*'s time, an Actor of Tragedy on the *Roman* Stage; and far from being ridiculous:

Quæ gravis Æsopus, quæ doctus Roscius egit.

But the *Æsop* meant by our Poet is the *Phrygian* himself, whose Fables were called *Jests*, Γελοῖα: so in the other passage, already cited, Αἰσωπικὸν γελοῖον. *Hesychius*, Αἰσώπου γελοῖα· ὅτως ἔλεγον τοὺς Αἰσώπου μύθους. (w) *Dion Chrysostom*, speaking of our *Æsop*, Ἠνείχοντο αὐτοῦ, says he, ἡδόμενοι ὅτι τὰ γελοῖα ἐν τοῖς μύθοις. *Avienus*, in his Preface; *Æsopus, responso Delphici Apollinis monitus, RIDICULA orsus est.*

(w) Orat. lxxii. p. 631.

II. The

II. The first, that we know of, who essayed to put the *Æsopic Fables* into Verse, was (x) *Socrates* the Philosopher. *Laertius* seems to hint, that he did but one Fable; and that with no great success; the beginning of it was this:

(x) *Plato in Phædone. Plutarch. de Aud. Poet. Laert. in Socrat.*

Αἴσωπός ποθ' ἔλεξε Κορίνθιον ἄστυ νέμεσθαι,
Μὴ κρίνειν ἀρετὴν λαοδίκῳ σοφίῃ.

'Tis observable again, that *Socrates* does not say, he made use of a *Book* of Fables: but, *I wrote*, says he, ὧν ἠπιστάμην, *those that I knew, and that I could first call to mind.* And this Fable too does not appear in our present Collection; if we may gather so much, from his naming the *Corinthians*.

(y) *Laert. in Demet.*

III. After *Socrates*'s time, (y) *Demetrius Phalereus* made Λόγων Αἰσωπείων Συναγωγὰς, *Collections of Æsopean Fables*: which, perhaps, were the first in their kind, committed to writing; I mean, in form of a Book. These seem to have been in Prose: and some, perhaps, may imagine, that they are the same that are now extant. I wish they were; for then they would have been well writ, with some Genius and Spirit. But I shall demonstrate Ours to be of a Modern Date; and the Composition it self speaks too loud, that it is not *Demetrius*'s.

IV. After

IV. After him, there was some body, whose name is now lost, that made a new Edition of the *Fables* in Elegiac Verse; I find no mention of them, but in *Suidas*; who cites them often under the name of Μῦθοι, or Μυθικά. I will set down a few Fragments of them; both to shew that they belong to the *Æsopic Fables*, which has not yet been observed, that I know of; and to enable you to judge, whether, if we could change our modern Collection for these, we should not get by the bargain.

(z) Τένεκα τῳ ἰδίῳ ἔτις ὄπωπε δύλῳ. (z) *Suidas in* Δύη.

This belongs to the Fable about the Two Bags that every Man carries; one before, where he puts other men's faults; another behind him, where he puts his own. This is mention'd by *Catullus*, *Horace*, *Phædrus*, *Galen*, *Themistius*, *Stobæus*, &c. and it is a Blot upon our Modern Sett, that there it is wanting.

(a) Αἰπεινοῖς ἐλαταῖς ἔρισεν βάτος· ἡ μὲν ἔειπε
Καὶ ναῦς ἢ νηὸς (b) τεμνομένη τελέων. (a) Id. in Αἰπεινή. (b) vulgo τεμνομένω.

And,

Αἰπεινῷ ἐλάτῃ ἐρὶς ὤρορεν ἄσυλα φάσθαι.

And,

(c) Οὐδὲ οἱ ἐδὲ ἄιδων ἄδε πάρφαλις, ἕνεκα θυμῦ
Ἐμπλείη —— (c) Id. in Ἄδην.

And,

And,

(d) Id. Ἀκινδύν. (d) Πικρὴ μέντε λύκοισιν, ἀτὰρ χιμαίρῃσιν [ἀκινδύς.

Some of them, it seems, were all Hexameters:

(*) Id. Στησ. & Schol. Aristoph. p. 220. —— (*) Ὅτι σφελῶν ὅτι πείρων
Ὀσσεχόενλά τε νῶτα ἢ ἀλπύλα γυῖα πιάδη.

'Tis an easie matter to find what Fables these pieces relate to; and I think they are all extant in the present Collection.

V. This, you see by this Specimen, was no contemptible Author: and after him (e) Suidas in Βάβριος. came one *Babrius*, that (e) gave a new Turn of the Fables into Choliambics. No body, that I know of, mention him; but *Suidas*, *Avienus*, and *Jo. Tzetzes*. There's one *Gabrias*, indeed, yet extant, that has comprized each Fable in four sorry Iambics. But our *Babrius* is a Writer of another Size and Quality; and were his Book now extant, it might justly be opposed, if not preferred, to the *Latin* of *Phædrus*. There's a whole Fable of his yet preserved at the end of *Gabrias*, of the *Swallow and the Nightingale*. *Suidas* brings many Citations out of him; all which shew him an excellent Poet: as this of the *Sick Lion*,

(f) Suidas in Ἀδμ. —— (f) οἷά τις νόσῳ
Κάμνων ἐβέβλητ', ἐκ ἀλητὲς ἀδμαίνων:

And

And that of the *Bore*,

Φρίξας δ' χαίτην (*b*) ἔνδορε φωλάδ' ἀχοίλης : (*b*) *Suidas in* Ἔνδορε.

And a great many others.

VI. I need not mention the *Latin* Writers of the *Æsopean Fables*; *Phædrus*, (*b*) *Julius Titianus*, and *Avienus*; the two first in Iambic, the last in Elegiac: but I shall proceed to examine those *Greek* ones now extant, that assume the name of *Æsop* himself. There are two parcels of the present *Fables*; the one, which are the more ancient, CXXXVI in number, were first publisht out of the *Heidelberg* Library, by *Neveletus*, *A. D.* MDCX. The Editor himself well observed; That they were falsly ascribed to *Æsop*, because they (*i*) mention holy Monks. To which I will add another remark; That there is a sentence out of *Job*, (*k*) Γυμνοὶ γὰρ ἤλθομεν οἱ πάντες, γυμνοὶ ἐν ἀπελευσόμεθα; *Naked we all came, and naked shall we return.* But because these two passages are in the *Epimythion*, and belong not to the Fable it self; they may justly be supposed to be Additions only, and Interpolations of the true Book. I shall therefore give some better Reasons, to prove they are a recent Work. That they cannot be *Æsop's* own, the CLXXXI Fable is a demonstrative proof.

(*b*) *Ausonius*, Ep. xvi.

(*i*) Φιλερήμοις χρὴ θεὸν Μοναχοῖς, Fab. 152.

(*k*) See Fab. 288. *Job* i. 21.

proof. For that is a story of *Demades* the Rhetor, who lived above cc years after our *Phrygian*'s time. The CXCIII is, about *Momus*'s Carping at the Works of the Gods. There he finds this fault in the Bull; *That his Eyes were not placed in his Horns, so as he might see where he pusht.* But (*l*) *Lucian* (speaking of the same Fable) has it thus; *That his Horns were not placed right before his Eyes.* And (*m*) *Aristotle* has it a third way; *That his Horns were not placed about his Shoulders, where he might make the strongest push; but in the tendereſt part, his Head.* Again, *Momus* blames this in the Man; *That his Φρένες did not hang on the out-side of him, so as his Thoughts might be seen:* but in (*n*) *Lucian*, the fault is; *That he had not a Window in his Breast.* I think it probable from hence, that *Æsop* did not write a Book of his Fables: for then there would not have been such a difference in the telling. Or, at least, if these that are now extant were *Æsop*'s; I should guess from this specimen, that *Lucian* had the better on't, and beat him at his own play.

(*l*) *In Nigrino.*

(*m*) *De Part. Anim.* l. iii. p. 54.

(*n*) *In Hermotimo.*

VII. But that they are recenter than even *Babrius*, who is himself one of the latest Age of good Writers, I discovered by this means. I observed in 'em several passages, that were not of a piece with

with the rest; but had a turn and composition plainly Poetical: as in the CCLXIII Fable, which begins thus; Ὄνος πατήσας σκόλοπα χωλὸς ἐγένετο. This, I saw, was a Choliambic Verse; and I presently suspected, that the Writer had taken it out of *Babrius*. And I was soon confirmed in my judgment by this (o) fragment of his, that belongs to the same Fable:

(o) *Suidas in* Κυνίας.

Ὁ δ' ἐκλυθεὶς πόνων τε καὶ νίας πάσης,
Τὸν κυνίαν χάσκοντα λακτίσας φεύγει.

For in the Fable in Prose there are these words; Ὁ ὄνος ἠλαθεῖς τοῦ πόνου, ὅτι τὸν λύκον ΧΑΣΚΟΝΤΑ ΛΑΚΤΙΣΑΣ ΦΕΥΓΕΙ. Whence it evidently appears, that the Author of that Parcel, which was published by *Neveletus*, did nothing else but epitomize *Babrius*, and put him into Prose. But I will give you some further proofs of it. The CCLXI begins thus; Ὄνῳ τις ὑπνώδης ξόανον ἦγε. Which, at the first reading, one perceives to be part of a Scazon: and thus it is in a (p) fragment of *Babrius*;

(p) *Suidas in* Κωμῆται.

Ὄνῳ τις ὑπνώδης ξόανον εἶχε κομήτης.

In the CLVI, about the *Fox* with the *Firebrand*; Ταὐτὸν ἔδρων καὶ οἱ δαίμονες εἰς τὰς ἀρέσεις τῆς βαλάνου.

βαλόνι& ὠδήγει. Who does not discover here a Scazon of *Babrius*?

Εἰς τὰς ἀρέσκας τὸ βαλόνι& ὠδήγει.

The CCXLIII is a manifest turning out of Choliambics into Prose; for the whole is made up either of Pieces or entire Verses:

—— ἡλίῳ πλέον λάμπει.

And,

Ἀνέμῳ ᾗ συρρεύσανι&, εὐθὺς ἐσβέσθη.

And,

Ἐκ δευτέρου δ' ἅπλων τις ——

And,

—— φαῖνε λύχνε ἡ σίγα,
Τῶν ἀστέρων τὸ φέγγο& ἔπου' ἐκλείπει.

In the CCXCIII, there are these remnants of *Babrius*:

Πόση γὲ δλκῇ τ' ἔμον αἷμα ῥεῤῥοθήσῃ.

And,

Ἔσω μάγειρο&, ὅς με συντόμως θύσει.

And,

—— ἢ πάλιν κερεῖ με, ἢ σώσει.

The

The CLXV begins thus; Ἀνὴρ μεσοπολιὸς δύο ἐρωμένας εἶχεν· ὧν ἡ μὲν μία νεᾶνις, ἡ δὲ ἄλλη πρεσβύτις: which I suppose to have been in *Babrius* thus:

Ἀνὴρ μεσοπολιὸς δὺ' ἐρωμένας εἶχεν,
Ὧν ἡ μία νεᾶνις, ἡ δὲ πρεσβύτις.

Or, Ὧν ἡ μὲν ἦν ν:

In all these passages here are most visible footsteps by which we may trace our Imitator: but generally he has so disguised the Fables, that no body can find they ever belong'd to *Babrius*. In the CCXLV, about the Priests of *Cybele*, there's nothing but a short dry Story, and no reliques of a Verse. But there's a noble fragment of *Babrius* belonging to the same Fable, which I will here set down, both to correct it, (for he that has given it us, (q) has printed it false,) and to shew you how much we have lost:

(q) *Natal. Com. l. ix. c. 5.*

Τάλλοις ἀμύσιαις εἰς τὸ κοινὸν ἐπράθη
Οὐδ' τις ἐκ εὐμοιρδ', ἀλλὰ δυσδαίμων·
Ὅσις φέρῃ πλωχοῖσι κὴ πανέργοισι
Πείνης ἄκος δίψης τε, κὴ κακλὼ τέχνῃσι.
Οὗτοι δὲ κύκλῳ πᾶσαν ἐξ ἔθνες κώμῃσι
Περιτονίες ἐλέγοντο· τίς γὰς ἀγροίκων
Οὐκ οἶδεν Ἄτιν λευκὸν, ὡς ἐπιρώθη;
Τίς ἐκ ἀπαρχὰς ὀσπρίων τε κὴ σίτων
Ἀνῷ φέρων δίδωσι τυμπάνῳ Ῥείης.

VIII. Thus I have proved one Half of the *Fables* now extant, that carry the name of *Æsop*, to be above a Thousand Years more recent than He. And the other Half, that were public before *Neveletus*, will be found to be yet more modern, and the latest of all. That they are not from *Æsop*'s own Hand, we may know from the LXX, *Of the Serpent and the Crab-fish*: which is taken from a *Scolion* or Catch, much older than *Æsop*, that is extant in (r) *Athenæus*, and must be corrected thus:

(r) Lib. xv. c. 15.

Ὁ καρκίνος ὧδε ἔφα, χαλᾷ τ' ὄφιν λαβών·
Εὐθὺν χρὴ ἔταιρον ἔμεν, μὴ σκολιὰ φρονέων.

And there is great reason to believe, that they were drawn up by *Planudes*, one of the Later *Greeks*, that translated into his native Tongue *Ovid*'s *Metamorphoses*, *Cato*'s *Distich's*, *Cæsar*'s *Commentaries*, and *Macrobius*. For there is no Manuscript any where, above CCC years old, that has the *Fables* according to that Copy. Besides that there are several passages, that betray a modern Writer; as in the LXXVII, Βέταλις, a *Bird*; and XXXIX, Βήνευρον, a *Beast*; both unknown to all ancient Authors: and in the CXXIX, *βοῶν ἐν τῇ καρδίᾳ*, *Crying in his heart*, a manifest Hebraism, in imitation of *Eccles.* xi. 1.

εἶπον

ἔπον ἐν τῇ καρδίᾳ μου. The LXXV, about the *Æthiopian*, is taken almost word for word out of the VI of *Apthonius* the Rhetorician; who made an Essay upon some *Æsopic Fables*, that is yet extant. The IV, as appears from the last sentence of it, is a Paraphrase on the CCLXXXIV of *Neveletus*'s Parcel; which Parcel, as I have proved above, are a Traduction of *Babrius*: and particularly in this very Fable there are footsteps of his Verses;

—— κατῆλθεν εἰς βαθὺν κρημνόν.

And,

—— μελενόει, ἢ βαθὺν ἐζήτει.

This Collection therefore is more recent than that Other; and coming first abroad with *Æsop*'s *Life*, writ by *Planudes*, 'tis justly believed to be owing to the same Writer.

IX. That Idiot of a Monk has given us a Book, which he calls *The Life of Æsop*, that, perhaps, cannot be match'd in any Language, for Ignorance and Nonsense. He had pick'd up two or three true stories, That *Æsop* was Slave to one *Xanthus*, (*s*) carried a Burthen of Bread, conversed with *Cræsus*, and was put to death at *Delphi*: but the Circumstances of these, and all his other Tales, are pure Invention.

(*s*) *Eustath.* in *Odyss.* x. p. 783.

He makes *Xanthus*, an ordinary *Lydian* or *Samian*, to be a (*t*) *Philosopher*: which word was not heard of in those days, but invented afterwards by *Pythagoras*. He makes him attended too, like *Plato* and *Aristotle*, by a Company of Scholars, whom he calls Σχολαστικοί: tho' the word was not yet used in that sense, even in *Aristotle*'s time. 'Twas the (*u*) King of *Æthiopia*'s Problem to *Amasis* King of *Ægypt*, *To drink up the Sea*: but *Planudes* makes it a Wager of *Xanthus* with one of his Scholars. To say nothing of his Chronological Errors, Mistakes of a Hundred or Two Hundred years: Who can read, with any patience, that silly Discourse between *Xanthus* and his Man *Æsop*; not a bit better than our *Penny-Merriments*, printed at *London-Bridge*?

(*t*) Ξάνθος ὁ Φιλόσοφος.

(*u*) *Plutarch. in Conviv.*

X. But of all his injuries to *Æsop*, that which can least be forgiven him, is, the making such a Monster of him for Uglineſs: an Abuse, that has found credit so universally; that all the modern Painters, since the time of *Planudes*, have drawn him in the worst Shapes and Features, that Fancy could invent. 'Twas an (*w*) old Tradition among the *Greeks*, That *Æsop* revived again, and lived a second life. Should he revive once more, and see the Picture before the Book that carries his Name; could he think it drawn for Himself? or for the Monkey,

(*w*) *Suidas in Αἴσ. & Ἀναβιῶναι. Schol. Aristoph.* p. 357, & 387.

Monkey, or ſome ſtrange Beaſt introduced in the *Fables*? But what Revelation had this Monk about *Æſop*'s Deformity? For he muſt learn it by Dream and Viſion, and not by ordinary methods of Knowledge. He lived (*x*) about Two Thouſand Years after him: and in all that tract of time, there's not one ſingle Author that has given the leaſt hint, that *Æſop* was ugly. What credit then can be given to an ignorant Monk, that broaches a new Story after ſo many Ages? In *Plutarch*'s *Convivium* our *Æſop* is one of the Gueſts with *Solon* and the other Sages of *Greece*: there is abundance of Jeſt and Raillery there among them: and particularly upon *Æſop*: but no body drolls upon his ugly Face; which could hardly have eſcaped, had he had ſuch a bad one. Perhaps you'll ſay, it had been rude and indecent, to touch upon a natural Imperfection. Not at all, if it had been done ſoftly and jocoſely. In *Plato*'s *Feaſt*, they are very merry upon *Socrates*'s Face, that reſembled old *Silenus*: and in this, they twit *Æſop* for having been a Slave: which was no more his Fault, than Deformity would have been. *Philoſtratus* has given us, in Two Books, a Deſcription of a Gallery of Pictures; (*y*) one of which is *Æſop* with a Chorus of Animals about him. There he is repre-

(*x*) *A. D.* MCCCLXX.

(*y*) P. 735.

represented *smiling and looking towards the ground, in a posture of Thought*; but not a word of his Deformity; which, were it true, must needs have been touch'd on, in an account of a Picture. The *Athenians* set up a noble Statue to his Honour and Memory:

(z) *Phædrus*, l. xi. fab.

(z) *Æsopo ingentem Statuam posuere Attici,*
Servúmque collocarunt æterna in basi;
Patere honoris scirent ut cuncti viam,
Nec generi tribui, sed virtuti gloriam.

But had he been such a Monster, as *Planudes* has made of him; a Statue had been no better than a Monument of his Uglineſs: it had been kinder to his Memory, to have let that alone. But the famous *Lysippus* was the Statuary that made it. And must so great a Hand be employed to dress up a Lump of Deformity? *Agathias* the Poet has left us an (a) Epigram upon that Statue:

(a) *Anthol.* lib. iv. Εἰς Φιλεσ.

Εὖγε ποιῶν, Λύσιππε γέρων, Σικυώνιε πλάστα,
Δείνιλλον Αἰσώπε σῶσας τῇ Σαμίᾳ, &c.

How could He too have omitted to speak of it, had his Uglineſs been so notorious? The *Greeks* have several Proverbs about Persons deformed; Θερσίτειον ἕλκωμα, Εἰδεχθὴς

Εἰδεχθὴς Κορυδεύς, &c. Our *Æsop*, if so very ugly, had been in the first rank of them; especially when his Statue had stood there, to put every body in mind of it. He was a great Favourite of *Cræsus* King of *Lydia*; who employ'd him, as his Embassador to *Corinth* and *Delphi*. But would such a Monster, as *Planudes* has set out, be a fit Companion for a Prince? or a proper Embassador; to be hooted at by all the Boys, where-ever he came? *Plutarch* represents him as a polite and elegant Courtier; rebuking *Solon* for his gruff and clownish behaviour with *Cræsus*; telling him, he must converse with Princes, (*b*) ἢ ὡς ἥδιστα, ἢ ὡς ἥκιστα, *either agreeably, or not at all.* Now, could either such a Station, or such a Discourse befit *Æsop*; if he was truly that Scare-crow, as he is now commonly painted? But I wish I could do that justice to the Memory of our *Phrygian*; to oblige the Painters to change their Pencil. For 'tis certain, he was no Deformed Person; and 'tis probable, he was very Handsom. For whether he was a *Phrygian*, or, as others say, a *Thracian*; he must have been sold into *Samos* by a Trader in *Slaves*. And 'tis well known, that that sort of People commonly bought up the most Beautiful they could light on; because they would yield the

(*b*) *Plut. in Solone.*

the most Profit. And there is mention of two Slaves, Fellow-Servants together, *Æsop* and *Rhodopis* a Woman; and if we may guess him by his Companion and (*b*) *Contubernalis*, we must needs believe him a Comely Person. For (*c*) that *Rhodopis* was the greatest Beauty of all her Age: and even a Proverb arose in Memory of it;

(*c*) *Pliny* xxxvi, 12. (*d*) *Herodotus. Suidas. Strabo.*

Ἅπανθ' ὅμοια, πλὴν Ῥοδῶπις ἡ καλή.

FINIS.

ERRATA.

PAge 48. l. 17. r. Πανὸς; p. 66. l. 14. r. *very well resolv'd*; p. 80. l. ult. r. *Ten years*; p. 90. l. 22. r. *gives a reason*; p. 93. l. 29. r. *of that Philosopher*; p. 124. marg. r. γλρων; p. 127. marg. r. ἴδη.